

The Technology Review

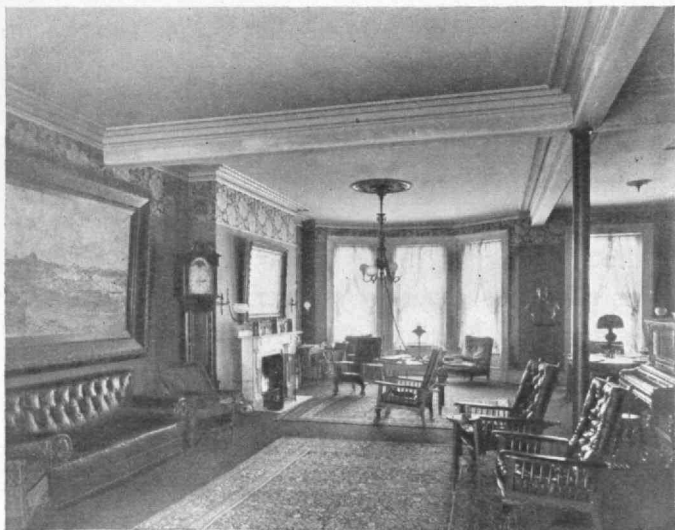
VOL. III.

JULY, 1901

No. 3

THE TECHNOLOGY CLUB

Somewhat more than five years ago a small party of men met in the Rogers Building, in the President's office.



Front of "Common Room."

These people gathered in answer to a notice issued April 23, 1896, summoning them, as signers of an agreement to that effect, to meet for the purpose of organizing the

technology review

Published by MIT

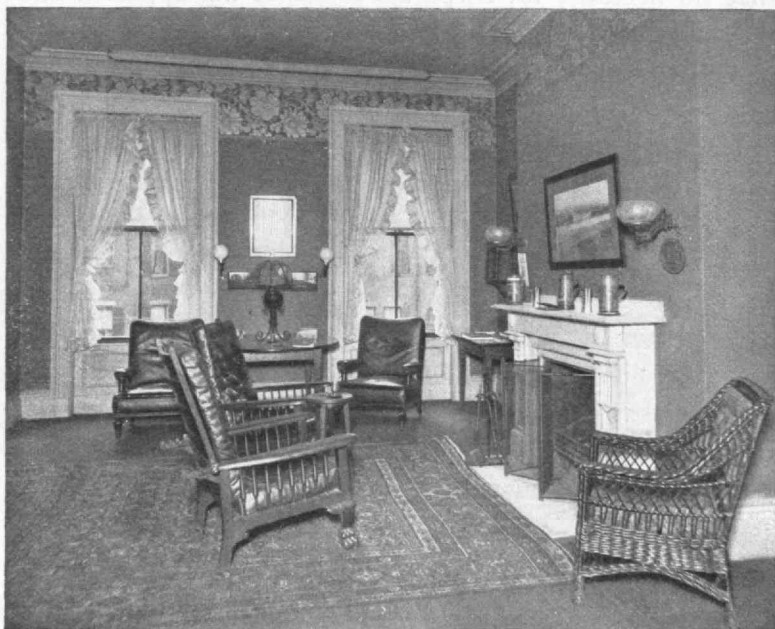
This PDF is for your personal, non-commercial use only.
Distribution and use of this material are governed by copyright law.
For non-personal use, or to order multiple copies please email
permissions@technologyreview.com.

Technology Club. This meeting was held May 1; and among those present were members of the Corporation and the Faculty, a number of graduates, as well as several former students at the Institute who had not become graduates. The scheme was a broad one, intended to include every one who had been definitely connected with "Tech" work, unless the undergraduates should be excepted; and, as to these, the question of their admission was at first left open, although there was from the beginning much sentiment in favor of admitting them to membership. No undergraduates, however, were included in the organizing committee. The policy of the club in this matter was promptly settled just previous to the first annual meeting, in October, 1896, when provision was made for the admission of sixty undergraduates, as part of a total membership limited to six hundred at that time. The policy in this direction thus early inaugurated has been uniformly maintained, and with no prospect of change at the present time.

At the meeting of May 1, officers were elected and measures taken for securing quarters, with the result that at the adjourned meeting of May 7, announcement was made that No. 71 Newbury Street had been secured on lease for five years from September 1, 1896, and with an option to the club for a renewal of the lease. So came formally into existence the Technology Club at the two meetings of May 1 and May 7; and so also came into use the house which has served so well, and which we shall leave, after all, with some regret when we go into our own house and into improved quarters in the fall.

Two matters not of formal record may well be referred to here. The real initiative seems to have been taken by the Alumni Association's Executive Committee of 1896 at

their first meeting, as a result of which a preliminary notice, under date of February 8, 1896, was sent to the officers and some of the members of the Corporation, to the present and past officers of the Alumni Association, to several members of the Faculty and to certain non-graduate



Rear of "Common Room."

alumni, inviting them to come together at a preliminary meeting to be held at the Institute. A second meeting, on March 5, was held at President Walker's house. Next followed the drawing up of the formal agreement to which twenty-five signatures were attached, this constituting the basis for the more formal meetings of May 1 and May 7.

The earlier purpose was to form a corporation at once, acting under the general laws governing the securing of

charters for clubs and similar associations. It was found, however, that some inconvenience would result if all the technicalities necessary were critically observed; and the project of corporate organization was early abandoned in favor of a simple association (largely in view of the fact that no necessity for corporate existence was apparent until the club should find it advisable to purchase real estate), so that corporate organization was not effected for nearly five years, or until March, 1901.

In the formation of the club General Walker took a warm interest from the beginning. Notwithstanding the many other interests he had in hand, busy as he generally was, and, as we now know, even then beginning to give way under the stress of many-sided efforts, he was known to be always available even to complete a quorum of the council, while in matters of policy he took an active and at times a most earnest and vigorous, even a controlling, part in its deliberations.

The preliminary circular from the Executive Committee of the Alumni Association contained the statement that "one of the greatest needs, perhaps the greatest, of the Institute to-day, is not pecuniary endowment, not greater strength or wisdom in its Faculty or its Corporation, but the earnest, active, persistent interest of its past students. On them its future must more and more depend, not only for material support, but for all the essentials of vigorous life." If General Walker's interest in the club was mainly along these lines, as it doubtless was, it is to-day pleasant for us to realize, as we may, that more than anything else in the history of the Institute the Walker Memorial has been the means of demanding and securing from the old students at Tech that "earnest, active, and persistent interest" so necessary now, and that his influence, exerted even

after death, has been most powerful, especially in this recognized direction of the Institute's greatest need.

The Technology Club is unique in many ways: first, perhaps, in the divergent interests of its four elements of membership,—Corporation, Faculty, former students and



A Corner of the Dining-room.

undergraduates,—the only common bond being loyalty to Tech. Again, on its financial side, it has been carried on from the beginning with a courage or a faith hardly exceeded by the Biblical grain of mustard seed. Starting absolutely without capital, its officers executed a five years' lease of its home, practically upon their personal credit. Extensive alterations were made, and the house furnished throughout, not extravagantly but becomingly and attrac-

tively, thus creating an immediate debt, which was carried for two years or more solely by careful financiering and the skilful use of credit; and even then the proposition for a guarantee fund was settled by the more simple device of borrowing from friends the sum of \$1,000, for which two equal notes were given, one of which was cancelled early in the current year, with the prospect that the gain for the present year will be sufficient to take care of the other. What wonder is it that the club, with this experience fresh in mind, could see its way clear to the purchase of a house estimated, with its alterations, to cost not less than \$33,000, although it had not a dollar of cash capital, and no property it could call its own with the single exception of the furnishings for its house.

Some of the earlier deliberations as to the policy of the Club are not without interest in view of present conditions. The first proposition was for resident dues of \$20 per year. The result showed that on \$12 per year the club was run successfully for two years. The fact that a third year showed a loss of some \$600 served to suggest that it is not always possible for the club officers to discover mismanagement the moment it occurs, and to demonstrate the necessity for a larger income, which resulted in the increase of dues to \$15 per year,—a sum which has not proved excessive in view of the maintenance of numbers closely approaching the limit set. In fact, a waiting list of resident members, despite a raising of the limit, seems probable at some time during the first year in the new house.

It must to any one seem now quite absurd that even at the outset there should have been any discussion, as there was, as to the advisability of maintaining a dining-room in the club. Without this it now seems doubtful whether the club could have met a reasonable measure of success.

Of its usefulness there was, of course, never any question. As to the financial stress it might impose, there was at first grave doubt. Even without the sale of liquors (for it has so far been a no-liquor club) the financial burden has been very light.



Strangers' Room.

Of the growth of the club itself, of course there are data. The total membership is now slightly above six hundred. It is somewhat surprising that the membership at the time of the first annual meeting, October 12, 1896, was as high as four hundred and forty-five, and at the end of the year four hundred and eighty-nine. Perhaps nothing shows better than this the value of the efforts put forth to make the club a success from its very start. Of the use

of the club it is more difficult to find satisfactory evidence. A year or two ago the treasurer reported that the use of the house had increased in one year 40 to 50 per cent. During the past year the use of the dining-room has shown an increase of about 40 per cent. above the preceding year. It is safe to say that, both in the number given and in attendance, the smoke talks and ladies' nights of the past year have been more successful than ever before. It would be invidious to draw any comparison as to their quality; nor need we, for they have from the very beginning been most acceptable. Some of the earliest are still remembered as being very delightful. It is hardly necessary to recite here anything as to the character of these entertainments.* Those who have tried it understand. Those who haven't done so have both a duty and a pleasure in store for them. In the direction of whist and pool playing or of whist and pool tournaments, there has been recently no increase, but rather some falling off in activity. Altogether there seems no doubt that the club is each year filling a larger place, and that its members are more and more finding greater occasion to use it. Tech men are not club men to an extent which makes it easy for them steadily to frequent such places. Engineering means a busy life, with little surplus time for play; and yet to the engineer the real necessity for recreation is greater than for most men. The club furnishes an opportunity for men of this sort, who, however, need some education in this direction before they can come to appreciate the value to them of a Technology Club.

The real importance of the club, however, does not lie altogether in its dining-room, its periodicals, its library, its quiet room, its bicycle shed, its card or pool room, nor yet in its smoke talks, invaluable as the latter are for personal

* For a list of the "Talks" for the winter of 1900-1901, see p. 340, *infra*.

social contact. Beyond all these, while not apart from any of them, the club has become the fixed home of the alumni, non-graduate and graduate alike. Here are held a majority of the class dinners. Committee meetings and conferences of every kind are by general accord appointed here. Receptions are held, already twice, in honor of incoming Presidents of the Institute, and many times for bodies of teachers and school superintendents, or of others already interested or whom it is sought to interest in the Institute's work. It serves not only to tie together Tech interests, but to bring these into contact with much that is going on in the outside world. Again, the club begot the Association of Class Secretaries, and the Association in turn begot the TECHNOLOGY REVIEW; and the REVIEW here desires, as a dutiful grandchild, to present this modest tribute of honor and love to its grand-parent, the CLUB, albeit the latter is itself of such tender years. The REVIEW, after itself embarking on a venture hardly less hazardous financially than the club had done, finds itself able at last to toddle around without further fear of falling, now well-nigh free from debt, and its condition improving every year,—it is now two and one-half years old,—although, if truth be told, it all but gave up the ghost, at the age of twelve months, from the ordinary perils of an early childhood not favored with excessive nutriment, financially.

Before the next issue of the REVIEW, we shall have parted from the old and have entered the new house, which has been practically a twin to the one now in use. The changes made will, however, make the new house definitely more attractive and usable than the old. Electric lights throughout will prove a pleasant improvement. The common room on the second floor will be substantially the same as now, except that the small room adjoining will no

of the club it is more difficult to find satisfactory evidence. A year or two ago the treasurer reported that the use of the house had increased in one year 40 to 50 per cent. During the past year the use of the dining-room has shown an increase of about 40 per cent. above the preceding year. It is safe to say that, both in the number given and in attendance, the smoke talks and ladies' nights of the past year have been more successful than ever before. It would be invidious to draw any comparison as to their quality; nor need we, for they have from the very beginning been most acceptable. Some of the earliest are still remembered as being very delightful. It is hardly necessary to recite here anything as to the character of these entertainments.* Those who have tried it understand. Those who haven't done so have both a duty and a pleasure in store for them. In the direction of whist and pool playing or of whist and pool tournaments, there has been recently no increase, but rather some falling off in activity. Altogether there seems no doubt that the club is each year filling a larger place, and that its members are more and more finding greater occasion to use it. Tech men are not club men to an extent which makes it easy for them steadily to frequent such places. Engineering means a busy life, with little surplus time for play; and yet to the engineer the real necessity for recreation is greater than for most men. The club furnishes an opportunity for men of this sort, who, however, need some education in this direction before they can come to appreciate the value to them of a Technology Club.

The real importance of the club, however, does not lie altogether in its dining-room, its periodicals, its library, its quiet room, its bicycle shed, its card or pool room, nor yet in its smoke talks, invaluable as the latter are for personal

* For a list of the "Talks" for the winter of 1900-1901, see p. 340, *infra*.

social contact. Beyond all these, while not apart from any of them, the club has become the fixed home of the alumni, non-graduate and graduate alike. Here are held a majority of the class dinners. Committee meetings and conferences of every kind are by general accord appointed here. Reception are held, already twice, in honor of incoming Presidents of the Institute, and many times for bodies of teachers and school superintendents, or of others already interested or whom it is sought to interest in the Institute's work. It serves not only to tie together Tech interests, but to bring these into contact with much that is going on in the outside world. Again, the club begot the Association of Class Secretaries, and the Association in turn begot the TECHNOLOGY REVIEW; and the REVIEW here desires, as a dutiful grandchild, to present this modest tribute of honor and love to its grand-parent, the CLUB, albeit the latter is itself of such tender years. The REVIEW, after itself embarking on a venture hardly less hazardous financially than the club had done, finds itself able at last to toddle around without further fear of falling, now well-nigh free from debt, and its condition improving every year,—it is now two and one-half years old,—although, if truth be told, it all but gave up the ghost, at the age of twelve months, from the ordinary perils of an early childhood not favored with excessive nutriment, financially.

Before the next issue of the REVIEW, we shall have parted from the old and have entered the new house, which has been practically a twin to the one now in use. The changes made will, however, make the new house definitely more attractive and usable than the old. Electric lights throughout will prove a pleasant improvement. The common room on the second floor will be substantially the same as now, except that the small room adjoining will no

longer be used as a toilet-room. The front basement will be arranged for toilet-rooms and a coat-room. The third floor will show little, if any, change. In the top floor the removal of a partition will give space for both a billiard and a pool table, and will provide at the same time a most attractive smoking-room. Perhaps the greatest improvement will be on the first floor, in the dining-room. The new room, already somewhat larger than the old, will be further enlarged by carrying the partition forward. In addition, a fine large window at the back will furnish better light. The high wainscot at the sides, in connection with the large windows at the back, will give to the room a style not quite possible in the older house.

The club, in its material surroundings, will enter upon its second chapter quite auspiciously. It is no longer an experiment. It is a demonstrated success. As a matter of record, it is, perhaps, proper to state that in financing the purchase of the new house the sum of \$20,000 was secured on first mortgage at $3\frac{1}{2}$ per cent., and the further sum of \$12,000 necessary was raised on second mortgage in varying amounts from certain of the members, and substantially without effort. One very pleasant incident resulted from sending to members a notice of the opportunity to subscribe to the loan. The response in one case came in the form, not of a subscription to a loan, but as an outright gift of the generous sum of \$1,000. To Mr. George A. Gardner of the Corporation belongs the credit of giving to the club its first money endowment, thus setting an example which will doubtless stimulate others to similar action. That Mr. Gardner has in other ways and with excellent discrimination been a benefactor of the Institute only adds to the appreciation in which his gift is held.

C. FRANK ALLEN, '72.

COMMENCEMENT WEEK

The closing exercises of the Senior year for the class of 1901 began with the customary annual reception tendered to the class by the Alumni Association. It was held at the Hotel Brunswick on Friday, May 31. The guests assembled at seven o'clock; and after the spread, and some music by the Glee and Banjo Clubs, the following speakers entertained those present: Charles T. Main, for the Association; President Pritchett; Mr. Desmond FitzGerald, for the Corporation; Professor Dwight Porter, for the Faculty; Mr. John R. Freeman, for the class of '76; Mr. Ellis F. Lawrence, for the class of 1901.

A prominent feature of the speaking was the announcement by Mr. FitzGerald that the Corporation had voted unanimously to erect at a cost of about \$275,000 a new electrical building, to add to the Institute's present equipment.

After supper had been served, Mr. Charles T. Main, president of the Alumni Association, opened the speaking with a brief address, which was delivered especially toward the graduating class. He said:—

It becomes my duty and pleasure to welcome the class of 1901 into the Alumni Association of the Institute. I wish to suggest to you that you remember that you have not completed your education as yet, that, indeed, you are only beginning it, for during your four years at Technology you have been laying only a foundation for your future work.

Your success will depend upon three things: first, that which I have just stated, that you realize you have not yet completed your education; second, that there are vast sources

of natural wealth in the world, which require for its proper use men of training and integrity; third, that you become good citizens, for nearly all the present problems of town, city, or State are scientific problems, and no set of men is better able to deal with such than those who have had your training, and who, in addition, possess the qualifications for good citizenship.

Men at present are often averse to entering into work in the city or town; but, if you are ever called upon to enter into any political work, remember that you should do your best to bring the work up to a higher standard than it had before.

President Pritchett was greeted with loud and continued applause, and spoke in part as follows:—

I am glad to be able to address you now as one of you, and as one who can look backward as well as toward the future. As I look over the past history of the college, I am glad to note an increase of interest in their Alma Mater as the days go by, and a growth of affection and respect for the Institute.

There are two things that are noteworthy in an Institute education,—broadness of view and thoroughness of preparation; and both of these, I am glad to say, are amply exemplified in the present class.

The developments of the year have been many; but the plans for the future are many more, and will commend themselves seriously to all. Two of the especially important things, however, that have happened this year are the eclipse expedition to Sumatra and the Walker Memorial Gymnasium.

In regard to the first matter, I must say that it was not as a school of applied science that we sent a party to that distant land, but it was rather on account of the Austin Fund which had been donated to the Institute, and which made the attempt possible. Professor Burton, in charge of the expedition, has already informed us of what splendid work they have done and what important results have been obtained.

An eclipse is not a rare thing; but one that lasts six minutes, as did the one of two weeks ago, is indeed a matter of rare occurrence.

An important matter in connection with our Tech party was that some of them had devised apparatus of great moment and indicative of much ingenuity. Among this apparatus was a device of Harrison W. Smith, by which it was possible to photograph the shadow bands, which occur just before and after an eclipse; and to have done this will be considered a discovery of the most important and interesting sort.

The Walker Memorial Gymnasium has already progressed so far that we see success in view. Our present plans are to minister to the social as well as to the athletic side of student life. Considerable progress has been made in the matter, so that I am now glad to state that \$90,000 has already been collected. This sum, too, has been collected from about 1,500 of you graduates,—a great tribute to you, and a great tribute to the man whom it is to commemorate.

When a great body of students gives thus, it is indeed a noble measure of devotion to the man, in this case General Francis A. Walker; and, indeed, few bodies of men could have achieved as much. Only a comparatively small amount remains to be raised, and I hope to be able to report within the next few days that the entire sum has been contributed. It is a thing we all have reason to be proud of.

Mr. Desmond FitzGerald spoke on behalf of the Corporation. The first part of his speech, which was received with loud cheers and continued applause, dealt with the new building which Technology is to have. Then, after continuing in a reminiscent vein, he concluded as follows:—

I look upon you, members of the class of 1901, with a feeling of envy, when I think of what opportunities you have over the classes of twenty-five years ago. You have had all the training for a scientific career that four years of

study could give you, and you start into life with a splendid scientific foundation.

I can hardly look at you with any degree of anxiety, but rather with feelings of envy; and I feel sure that you will carry the engineering profession farther and better and to more successful points of vantage than we older engineers have.

Professor Dwight Porter, representing the Faculty of the Institute, was next introduced, and spoke, in part, as follows:—

It is an honor and a pleasure to speak to you, members of the graduating class, at this time. You have the consciousness of having brought a hard fight to a successful finish, and you enjoy the unique distinction of being our vanguard in the new century.

All of us, both individuals, corporations, and even the nation, are entering into corporate enterprises of a large character, so large that they could not be successful were it not for the co-operation of a body of men trained in scientific and technical methods. For four years we have watched over you, and now for the future we are to depend upon you.

We want you to teach your children that there is no place in all the world like old Technology; and, as a member of the Faculty, I take pleasure in wishing you, one and all, God-speed.

John R. Freeman, of the class of 1876, gave a very interesting and instructive address on "Twenty-five Years Ago." He spoke enthusiastically of the friendships of his student days, of how much he had benefited from the good will of his classmates, and how great a help it had been to him in his after-days. Continuing, he said:—

I wish to give you some advice derived from experiences of the past twenty-five years. There are three great helps

to success,—to have an object in life, to realize that a great end of college life is a broadening of the humanities, and to understand that it is not technical skill that brings success as much as character and honesty.

I wish to add a few words of counsel. Don't be pessimists. Look over the records of Tech alumni, and note how few successful pessimists you will find. Indeed, they are outnumbered by the optimists in the ratio of 100 to 1. Steadfastness of purpose, earnestness and application to business, are essential for success in this world much more than brilliancy.

Ellis F. Lawrence, president of the class of 1901, was the closing speaker, responding for his class. He told in detail many of the important and decisive incidents of his career as a student at the institution, and was especially enthusiastic in regard to his class, telling of how heartily it sympathized with the Alumni Association in all its aims, and how fully it appreciated the reception tendered to it on the eve of graduation.

For the above, as well as the following addresses, thanks are due the *Tech*.

The second event of the week was the annual concert by the Musical Clubs. It was held in Huntington Hall on Saturday, June 1. The attractive programme was thoroughly enjoyed by many friends of the Senior Class and of the club members. The matrons were Mrs. Pritchett, Mrs. Tyler, Mrs. Swain, Mrs. Chandler, Mrs. Ripley, and Mrs. Clifford.

The class met in Trinity Church for the Baccalaureate Sermon, as in years past. It was delivered on Sunday, June 2, by Bishop Lawrence, as follows :—

"Unto the measure of the stature of the fulness of Christ."—EPHESIANS iv. 13.

It is a common remark that the keynote in the advance of the last century was that of personal liberty,—the right of the individual to live, think, act, and vote. We hear at the same time that the keynote in the advance of this century is to be that of organization and combination.

We are catching the first faint sounds in the combination of capital, the development of great mechanical plants, their centralization about one power-house, and the more complete organization of labor.

As we contrast the clumsy printing-press at which Franklin worked with one of those marvellous giants of to-day, which drop pages like autumn leaves; as in some great factory we watch the ten thousand bits of intricate machinery all moved by one great shaft; as we note how every part is fitted in form, strength, and material for its particular work,—we are moved with the beauty, economy, and power of organization. How quickly the bolt that is worn and the screw whose thread is lost fall to the scrap-heap! How mercilessly a whole engine is doomed to junk when its life has gone out!

The whole movement fascinates us.

We turn to the study of nations, and the same keynote follows us there.

Through race inheritance, experience, and skill, a few great nations have the power of governing and civilizing. All around the world are tribes fighting and little nations struggling for supremacy. Half-civilized peoples are holding great continents whose resources are undeveloped, untold riches lie under foot. Even if the people knew it, they could not draw the wealth up to the surface: they are ignorant and poor. What right have such people to cumber the earth? They must either learn, be civilized, or be wiped off the earth. Why not hitch on to their clumsy life the belt of one of the great nations? Put in new machinery, and, lo! the schools will open, the printing-presses move, and the hills give forth their wealth. What matters it if a tribe or race is wiped out? Civilization must go

on, the earth must be developed. Let those great nations that can do it best do it.

Sometimes there is danger of an illustration becoming an argument, and I am not sure that our taste for mechanics and our bent for organization are not leading us to dangerous conclusions.

If a nation is a machine, and she be made up of particles which can be used, discarded, and destroyed at pleasure, very good. But a nation is not a machine: it is a life. It is made up of living, throbbing men. And the most precious things in national life are the character and the liberty of the individual. The real test in the advance of any nation is in this: whether in the advance and the increase of power the real strength which goes to make up the nation is still there,—character, individual liberty, men.

I emphasize this, my friends, because I really feel that in this mechanical and commercial age there is danger that the finest type of character be lost in the movement for organization.

Let me say once and for all that men may reach the highest pitch of character through organized action. The football player who loses himself and all applause in his support of the team is finer than he who, by brilliant individual play, throws the team into confusion. The patriot who gives his life for his country, the martyr who gives his life for the Church, reveal the highest types of character. The motive and the action must, however, have been free and those of a free agent. It is not the falling in battle that is noble: it is the character that leads the man into battle, and keeps him there.

You are going to throw yourselves, young men, into work, earn your living, and fight for existence and success. You are going to do your part, little or great, in the up-building of the nation and of civilization.

What I want to say to you—in fact, the only thing that I want to say—is that you can do it only by building up through your work, your struggles, successes, and defeats your noblest and best manhood. That is why I have

taken the text for my starting-point, "Unto the measure of the stature of the fulness of Christ."

I have nothing new to tell you. I simply want to point out three elements which in the process of life and work are essential to the full development of character.

The first is a clear aim and intensity of purpose. The civilization of to-day has little use for the aimless men and women,—the floaters, hulks, and derelicts. There are such in all classes of life,—men and women of kindly intentions, and sometimes of good ideals, who have not the stuff in them to create heat and power. They do not move, or, if they do, it is only to drift with the tides. In the stress of life such people go under. The ship that has on a full head of steam is pretty sure to come out best in a collision.

The fact that you entered this Institute shows that you had an aim in life; and the habits of work that have enabled you to complete your course have developed in you intensity of purpose and industry. You have a good start.

A man, I care not in what occupation he may be, who works intensely, thinks. His intellectual machinery, as well as his muscles and nerves, are kept alert. Mould and rust do not cling to him. He has capacity for growth.

The habit of industry has its negative use, too. It keeps a man from yielding to lower tastes and passions, habituates him to giving up some things for others that are more to his purpose, toughens his moral fibre, and affords him steadiness of aim.

There is something fine in the way in which thousands of young men with this intensity of purpose and love of work throw themselves into the chance that is given them. Into the construction of a dam, the boring of a tunnel, or the erection of a warehouse they put the very best of their moral and intellectual power.

It was said of Mr. Clark, the late president of the New Haven Railroad, that he looked upon the road-bed between New York and Boston as his memorial, his contribution to civilization. It is a fine thing if any man can have some

such visible contribution as a result of his life-work. The real contribution of President Clark, or of any other man, to civilization is, however, his character, the man himself.

Watch for a few years a group of young men taking up their work. Follow them as you watch a body of skirmishers at the front. Soon you will see them deploy and draw apart. Take one. He gives himself early and late to some bit of engineering, it may be; concentrates all thought upon that. He drops, one by one, his old schoolmates, then the interest in literature that he caught in school-days; he withdraws gradually from society; his work encroaches upon his Sundays, and his habit of worship declines; he loses touch with the political and charitable interests about him. He is succeeding in his profession. He is, at the same time, becoming narrow, unsympathetic, hard, and saturated with a spirit of materialism. He goes on his path doggedly, persistently, puts his career through to the end and dies, as you and I have known men to die, having given his life for some great corporation or some advance of public service. It was fine, it was chivalrous, and it was senseless; for he gave what was more than his life, what no man had a right to give,—his character, his broader, finer, and more spiritual powers. Civilization may be the richer for his skill, but civilization is many times the poorer for the loss of the full manhood of that man.

It is against this tremendous pressure of to-day, to lose the man in the work, that I warn you, my friends. It is a temptation that makes its strongest appeal to the finest workmen and the noblest natures.

It is a costly business, if civilization is to be upbuilt at the expense of character. We are not yet ready to yield to the idea that manhood must be lost in order that science, organization, and business may go on. We do not care to awake some day to find that the arts, the machinery, the comforts, and the wealth of civilization are here, but that the man has gone out of them; for on character civilization is built.

What, then, is the alternative? you ask. Is a man to lose his intensity of purpose, and give himself in a half-

hearted way to his work? By no means. Intensity, industry, concentration, a man must have to do his best work: that is the first element.

The second element is that he shall, at the same time, see his work in its wider and deeper relations.

A few years ago I went from one of your Commencement exercises, with its abstracts of original problems, direct to the examinations at West Point. The contrast was remarkable. The students here had been taught to see the relations of part to part in their problems: they had been required, given certain conditions, to work original problems. Thus were developed breadth of mind, imagination, and the power of thought. At West Point the standards of entrance had up to that time been kept so low by Congress that it was impossible for even the best teachers to do much more than cram the cadets' minds with information. With but few exceptions there was little original work done. They had not time to see things in their broader relations. Breadth of mind and originality had to come later, if at all.

What I say to you now, therefore, is: Continue and develop the habits which you have gained here. Be ever alert to see your work in its broader relations.

A young man may be but a draughtsman in an architect's office. The arch, however, into the plan of which he is putting his best thought, touches a thousand interests. From it his mind runs out into the higher laws of mechanics; through the material of the arch the imagination turns to geology and the wonders of rock formation. Art, history, and ancient civilizations all conspire to give that bit of drawing upon the draughtsman's table beauty, color, and poetic interest. Or the duty of the civil engineer may lead a young man into a piece of public work; and, in the little fraction with which he has to do, he finds not only mechanical and scientific problems close at hand, but also the relation of the municipality to the welfare and comfort of the people. The gang of Italians about him spur him to a study of populations, racial characteristics, and the problems of immigration, charity, and mixed populations.

Such interests do not detract from the intensity of aim and purpose. On the contrary, they react; and, while giving breadth of vision, they also impart freshness and brilliancy of thought. They make him no less a man of science; and, at the same time, they make him a better citizen, a broader, more sympathetic, and finer man.

We all want, especially those of us who are hard at work, to give freer play to the imagination, to habituate ourselves to break from the bondage of drudgery, and now and again roam in the broader fields of literature, thought, and life.

We all need to stimulate our sympathies. By an interest in men of other interests and other walks of life, we should keep ourselves sensitive to their tastes and prejudices, and create with them a bond of common life.

Society cannot be held together by numbers of men who confine themselves to the interests of their several callings. Popular education has enlarged the vision of the people; civic duties and family responsibilities broaden the sympathies of the workingman as well as the expert. Beneath the surface of our industrial and commercial life are myriads of threads of sympathy, culture, common cause, and kindred thought, that bind society together, and enable us all to live with a better understanding of each other and in a spirit of mutual helpfulness. Every man who looks through his work to the deeper bonds of society, who by broader thought, larger culture, and wider sympathy develops his whole being, is not only doing his special work, but is taking part in the uplift of his fellow-men and the redemption of society.

Has it ever occurred to you that, if one enters his work with intensity of purpose and looks through his work into the broader interests of life, he always comes into contact with the motives, ambitions, affections, and ideals of men? He reaches through the material to the spiritual. It must be so. Behind the development of material resources and of intellectual truth stands man. It is his will, his moral and spiritual nature, that set the wheels of civilization in motion.

Go one step further, and have you not been impressed with the fact that, where these spiritual powers are, where man is, there you will always find some faith, some hope, or some sure confidence that there is a Source of the spiritual powers higher than man? In other words, the deeper study of life's powers brings one face to face with the fact that the greatest spring and the surest guide of life's powers is in religion. A knowledge of man leads unerringly to a faith in God.

I have led you to the thought of religion through this path with a purpose.

One of the obstacles to the increase of faith on the part of many people is that religion is so often set apart as a thing by itself, that it has but little relation to the work and studies of man. It stands in some men's minds like one single isolated tower rising from the flat roofs of a city; whereas religion, rightly conceived, is as a lofty tower, to be sure, but a tower rising amidst the homes, warehouses, and public buildings of the city, imbedded in the same soil with them, rising up with them foot by foot, simply lifting its head a little above them, like some one tree in the forest, as if to show them the way to a higher and purer life.

The Christian faith is not a phase of thought or a thrill of the emotions which one can assume for an hour on Sunday or for a few days in some crisis of life, and then put aside. It is not a withdrawal from the affairs of the world, nor a putting off of many of the great commercial or material interests of life. It is the clothing of them with spiritual meaning and eternal significance. "I am come that they might have life, and that they might have it more abundantly," said the Master. When, then, a man with intense purpose and broad vision reaches into the heart of his work, studies its end and motive, he discovers that to it and to all the movements of the world there is a spiritual significance. "The whole creation groaneth and travaileth," the foundries shake, and the wheels in mill and power-house move, that the Son of Man may come among men with greater spiritual power than ever.

Through their work, men are being upbuilt in self-restraint, temperance, purity, and love. Finding in God, through the revelation of his Son, these spiritual qualities carried to their ideal, man turns to him, and through worship gains strength, comfort, and inspiration. Through the smoke of the city and the din of the shop he discerns the purity of heaven. From the strife of city politics he catches a glimpse of the glory of the heavenly city, where perfect righteousness reigns.

I tell you, young men, that what the workmen and thinkers, the philosophers and the hod-carriers,—what we all need more than anything is to bathe ourselves in the pure light and heavenly radiance of God's throne. We want to lift our heads again and again above the murky atmosphere of toil and pleasure, and through prayer, hymn, and worship catch some of the freshness of the heavenly life, and live in the presence of Christ. Cut religion out of men's lives, and you have cut out from the world the finest inspiration to beauty, poetry, patriotism, and love. Never allow your ambition and your intensity of purpose to draw you away from the habit of seeking God in private prayer and worshipping him in common prayer and the sympathetic presence of your brother-men in church. There is one character that the whole world has recognized as the ideal toward which the world should move. He was intense in his purpose more than man ever was. Through the common things and deeds of life he saw large principles and opened up deep truths; and he lived in the very presence of God. Whoever would catch that ideal must live "unto the measure of the stature of the fulness of Christ."

Men of the class of 1901,—my brothers,—your happy and busy days in this school are coming to a close. You have worked at your studies, and have gained knowledge. You have gained what is more precious than knowledge,—experience, friendships, and happy memories. Up to this time the path of life has been smoothed for you by the help and affection of parent and the guidance of teacher. Now, as never before, you have yourself to de-

pend upon. Taking the world as it goes, it is pretty just in the distribution of rewards. On a man's own merits or demerits he stands or falls.

I have spoken no new word to you. This is the time for the recollection of old and familiar truths.

Keep by you the fundamental virtues and homely maxims of your boyhood life. No smartness, brilliancy, or skill, will enable a man really to succeed without them. Strike out in life with intensity of purpose and definiteness of aim; keep the habit of lifting your head now and again from your work, and catching wider visions of thought; through your work look deeply into life. And, finally, let the light of God's love, the inspiration of personal faith, sustain and comfort you in defeat and success; for you are setting out upon a career which will last more than half a century. It will be the unmaking or the making of you unto life eternal.

Class Day followed on Monday, June 3, the exercises being held, as usual, in Huntington Hall at half-past two. The hall was unusually well decorated in greens. The Class Day Committee and officers occupied the stage. The officers were: First Marshal, Francis Kernan Baxter; Second Marshal, Valdemar Frank Holmes; Third Marshal, William Truman Aldrich; President of 1901, Ellis Fuller Lawrence; Historian, Herbert Harley Kennedy; Statistician, Percy Harry Parrock; Prophet, Mortimer Bristol Foster; Orator, Allan Winter Rowe.

The custom started last year of having the spread served on the lawn between Rogers and Walker was again observed.

The Commencement exercises occurred on the following afternoon, Tuesday. The hall was crowded when the Seniors filed in and took their seats. Upon the entrance to the stage of the President, Faculty, and Corporation, the men arose. After an introduction by Dr. Pritchett, short synopses of the following theses were read:—

COURSE I.—Francis Blair Driscoll. "A Comparison of the Elevated Railway Structures in Boston, New York, Chicago, and Kansas City."

COURSE II.—James Russell Putnam. "An Investigation of the Flow of Air through an Orifice."

COURSE III.—Frank Dillman Rash. "The Lixiviation of a Low-grade Copper Ore."

COURSE IV.—William Cornell Appleton. "A Design for the United States Building for a Pan-American Exposition."

COURSE V.—Edward Pierrepont Beckwith. "An Experimental Study of Some Chemical and Physical Properties of the Becquerel Rays."

COURSE VI.—Warren Ira Bickford. "A Study of a Wagner Single Phase Induction Motor."

COURSE VII.—Miss Anna Billings Gallup. "An Investigation by Means of the Sphygmomanometer of the Effect of Mental Work upon Arterial Blood Pressure."

COURSE VIII.—Clinton Merrill Dearden. "An Investigation of the effect of Inductance on the Character of Spark Spectra with Particular Reference to the Spectrum of Tellurium."

COURSE IX.—Charles Francis Faulkner Campbell. "A Comparison of Webster and Burke as Orators."

COURSE X.—Joseph Ernest Philbrick. "The Determination of Sulphur in Crude Illuminating Gas."

COURSE XI.—Frederic H. Bass. "A Project for the Drainage of the Fresh-pond Marshes lying in Cambridge, Arlington, and Belmont."

COURSE XII.—Frederick G. Clapp. "A Study of the Geological History of the Charles River."

COURSE XIII.—Walter A. Read. "Rudder Experiments on the Steamer 'Guardian.'"

The President's address followed, after which he asked that it be not reported. After the awarding of the diplomas the formal exercises were closed.

The customary reception was held in the library, imme-

diately following the exercises. President Pritchett, Mrs. Pritchett, and Mrs. Rogers received.

CANDIDATES AWARDED DEGREES IN THE SEVERAL DEPARTMENTS, WITH TITLES OF THEIR GRADUATION THESES

I. Civil and Topographical Engineering; II. Mechanical Engineering; III. Mining Engineering and Metallurgy; IV. Architecture; V. Chemistry; VI. Electrical Engineering; VII. Biology; VIII. Physics; IX. General Studies; X. Chemical Engineering; XI. Sanitary Engineering; XII. Geology; XIII. Naval Architecture.

CANDIDATES FOR THE DEGREE OF MASTER OF SCIENCE

ELBERT GROVER ALLEN, S.B., *Brockton*. Experiments on the Wave-form of a Rotary Converter.

GEORGE BURDETT FORD, A.B., S.B., *Clinton*. A Design for an Administration Building for the United States Government at a Pan-American Exposition, to be located centrally at the Head of a Grand Court of Honor.

ISAAC OSGOOD, S.B., *West Newton*. An Apparatus for Studying the Alternating-current Arc.

PAUL LEON PRICE, Ph.M., S.B., *Winterset, Iowa*. A Design for a Steel Dome, with Construction Details.

CANDIDATES FOR DEGREE OF BACHELOR OF SCIENCE

CLAYTON ALBISTON (II.), *New Bedford*. An Investigation of the Relation between Cutting Speed and Tool Pressure on Lathe Tools. (With H. R. GILSON.)

WILLIAM TRUMAN ALDRICH (IV.), *Providence, R.I.* A Design for a Country Residence.

GEORGE WINTHROP ALLEN (II.), *East Bridgewater*. An Investigation of the Transverse Strength of Granite. (With A. K. ISHAM.)

CHARLES LOUIS BATES ANDERSON (I.), *Newburyport*. Experiments on the Loss of Head due to Sudden Enlargement in Pipes forming an Angle. (With R. MURRAY.)

- ROBERT ANDREW (II.), *Cincinnati, Ohio*. A Determination of the Proper Coefficients for Use with Triangular Weirs of 60° and 30° Openings.
- WILLIAM CORNELL APPLETON (IV.), *Auburn, R.I.* A Design for the United States Building for a Pan-American Exposition.
- WILLIAM COLLINS ARSEM (V.), *Malden*. A Systematic Method of Procedure for the Qualitative Detection of the Rare Earths.
- GEORGE DESLER ATWOOD (II.), *Brooklyn, N.Y.* Tests on a Bulkley Injector Condenser.
- CHARLES ISRAEL AUER (III.), *Cincinnati, Ohio*. An Investigation of the Character of Silver and Gold Amalgams.
- FREDERIC CHESLEY AYERS (XIII.), *Roxbury*. Design of a Bucket and Suction Dredge.
- ROBERT WILLIAM BAILEY (XIII.), *New York, N.Y.* Design of a Steel Caisson for a Dry Dock.
- FREDERIC HERBERT BASS (XI.), *Hyde Park*. A Project for the Drainage of the Fresh Pond Marshes lying in Cambridge, Arlington, and Belmont.
- FRANCIS KERNAN BAXTER, Jr. (III.), *Utica, N.Y.* A Study of the Concentration of a Graphite Ore.
- EDWARD PIERREPONT BECKWITH (V.), *Milton*. An Experimental Study of Some Chemical and Physical Properties of the Becquerel Rays.
- EDWARD BROWNE BELCHER (II.), *Malden*. An Investigation of a Gasoline Automobile Engine.
- WARREN IRA BICKFORD (VI.), *Washington, D.C.* A Study of a Wagner Single-phase Induction Motor. (With R. B. MORTON.)
- LYMAN HERBERT BIGELOW (I.), *Charlestown*. A Plan for Abolishing the Grade Crossings on the Old Colony Railroad at Harrison Square and Vicinity. (With T. F. LANGE.)
- ARTHUR HENRY BIRKS (IV.), *Peoria, Ill.* A Design for a Three-hinged Arch Steel Highway Bridge.
- HUSE TEMPLETON BLANCHARD (IV.), *Boston*. A Design for an Art Museum.
- WILLIAM GROVE BLAUVELT, A.B. (VI.), *Virginia City, Nev.* A Test of an Electric Railway.

- ROY HALE BOLSTER (VI.), *Roxbury*. An Investigation of the Variation of the Tensile Strength of Bare Aluminium Wire while carrying Current. (With T. F. E. REARDON.)
- FREDERICK HENRY BOND, Jr. (IV.), *Brookline*. A Design for a Casino.
- FREDERIC ROY COURTENAY BOYD (VI.), *Hartford, Conn.* An Investigation of a 16 Kilowatt Constant Current Transformer. (With M. B. FOSTER.)
- JOHN BOYLE, Jr. (III.), *Newburyport*. Experiments on the Treatment of Prepared Jewellers' Sweeps.
- JOHN PORTER BRIGGS (I.), *Plymouth*. Compressive Tests on Wood containing Varying Degrees of Moisture. (With L. DU PONT.)
- EDMOND FRANCIS BRIGHAM (X.), *Newton Highlands*. The Tensile Strength of Certain Bronzes.
- MATTHEW CHAUNCEY BRUSH (II.), *Duluth, Minn.* A Series of Road-tests on a Schenectady Compound Passenger Locomotive. (With W. F. DAVIDSON.)
- EDWIN PARKS BURDICK (I.), *Cambridge*. A Design for a Skew Railroad Bridge on a Curve.
- CHARLES WALKER CADE (X.), *Cambridge*. A Study of the Atwood Power Gauge.
- FRANCIS ELMORE CADY (VI.), *Chicago, Ill.* A Study of Alternating Current Wave-form by the Braun Tube.
- ANTOINE BLACKWELL CAMPAU (IV.), *Grand Rapids, Mich.* A Design for a Country House for a Painter.
- CHARLES FRANCIS FAULKNER CAMPBELL (IX.), *London, Eng.* A Comparison of Webster and Burke as Orators.
- GEORGE WILLIAM CARTER (VI.), *Chicopee Centre*. A Study of a Three-phase Motor. (With C. R. HAMMOND.)
- ALBERT ÆNEAS CASANI (I.), *Everett*. A Plan for Abolishing the Grade Crossing on the Boston & Maine Railroad at Saugus. (With F. J. DULUDE.)
- JOSEPH PRIESTLEY CATLIN (VI.), *Boston*. An Efficiency Test of an Electric Railway Plant. (With W. E. FARNHAM.)
- HOWARD TRUEMAN CHANDLER (II.), *Mattapan*. A Series of

- Tests upon the Heating and Ventilating Plant of a Theatre, combined with a Design for a System of Ventilation for an Office Building. (With G. T. WILSON.)
- LEONARD DEXTER CHANDLER (II.), *Somerville*. The Speed Variation and the Action of the Reciprocating Parts of a 36 Horse-power Otto Gas Engine. (With C. F. JOHNSON.)
- EBEN LORD CHAPMAN (I.), *Franklin Falls, N.H.* A Test of an American Impulse Water Wheel.
- FRANK DAVID CHASE (I.), *Chicago, Ill.* A Plan for Abolishing the Grade Crossing on the Boston & Maine Railroad at Franklin Park, Revere. (With W. G. SUCRO.)
- CHESTER NILES CHUBB (I.), *Lawrence*. A Plan for Abolishing the Grade Crossing on the Boston and Albany Railroad at Ashland. (With F. W. CLAFLIN.)
- EDWIN FAYETTE CHURCH, Jr. (XIII.), *Roxbury*. Determination of the Strength and Stability of the United States Floating Dock at Algiers, La.
- FRED WINSLOW CLAFLIN (I.), *Hopkinton*. A Plan for Abolishing the Grade Crossing on the Boston & Albany Railroad at Ashland. (With C. N. CHUBB.)
- FREDERICK GARDNER CLAPP (XII.), *South Boston*. A Study of the Geological History of the Charles River.
- FREDERICK WARD COBURN (X.), *Lowell*. The Relations between the Micro-structure and Physical Properties of Car-axle Steel. (With A. W. HIGGINS.)
- FRANK ARNOLD COLBY (IV.), *Cambridge*. A Design for a Symphony Hall to seat an Audience of 500 Persons.
- FREDERICK CUSHING CROSS (IX.), *Fitchburg*. A Study of the Fitchburg System of Poor Relief.
- LOUIS AUSTIN CROWELL (I.), *East Dennis*. Determination of the Coefficient of a Two-foot Suppressed Weir. (With W. I. MARTIN.)
- WALTER MOLBRAY CURTIS (II.), *Whitman*. The Line of Resistance of the Masonry Arch. (With A. C. JEWETT.)
- NEWMAN LORING DANFORTH (II.), *Buffalo, N.Y.* A Design for an Electrically Illuminated Fountain.

- HARRY EDSON DART (VI.), *New London, Conn.* A Photometric Investigation in Interior Illumination. (With C. K. FLINT.)
- WILLIAM FREDERICK DAVIDSON (II.), *New Castle, Pa.* A Series of Road-Tests on a Schenectady Compound Passenger Locomotive. (With M. C. BRUSH.)
- ARTHUR COLBEY DAVIS (V.), *Gloucester.* A Systematic Series of Lecture Experiments on the Aromatic Compounds.
- WALTER POORE DAVIS (III.), *Newburyport.* The Cyanide Treatment of Raw and Weathered Ores containing Arsenical-pyrites.
- CLINTON MERRILL DEARDEN (VIII.), *Fall River.* An Investigation of the Effect of Inductance on the Character of Spark-spectra with Particular Reference to the Spectrum of Tellurium.
- WILFORD WILLIS DEBERARD, B.S. (XI.), *Fairfax, Ia.* A Discussion of the Improvement of the Salem Water Supply.
- CHARLES HAMILTON DENNISON (X.), *Chelsea.* A Study of the Bechi Test for Cottonseed Oil.
- RICHARD ERNEST DOW (V.), *Melrose.* A Study of the Influence of Conditions on the Yield of Benzaldehyde, Obtainable in the Oxidation of Toluene by Air.
- WILLARD WELLMAN DOW (IX.), *Malden.* The Consolidation of Iron and Steel Plants into the United States Steel Corporation.
- FRANCIS BLAIR DRISCOLL (I.), *Dorchester.* A Comparison of Elevated Railway Structures in Boston, Chicago, New York, and Kansas City.
- NORMAN ARMIN DUBOIS (V.), *Fall River.* An Investigation of the Constitution of Ferric Chloride in Aqueous Solution.
- FREDERICK JOSEPH DULUDE (I.), *Woonsocket, R.I.* A Plan for Abolishing the Grade Crossing on the Boston & Maine Railroad at Saugus. (With A. A. CASANI.)
- LAMMOT DU PONT (I.), *Wilmington, Del.* Compressive Tests on Wood containing Varying Degrees of Moisture. (With J. P. BRIGGS.)
- FRANK NELSON EMERSON, A.B. (IV.), *Peoria, Ill.* A Design for a City Hall.

- MANSFIELD ESTABROOK, A.B. (II.), *St. Paul, Minn.* A Study of Stresses in Eccentrically Loaded Brick Piers.
- WILLIAM ELLIS FARNHAM, Ph.B. (VI.), *Providence, R.I.* An Efficiency Test of an Electric Railway Plant. (With J. P. CATLIN.)
- EDWARD PICKERING FLEMING (III.), *North Cambridge.* The Cyaniding of a Silicious Gold Ore.
- CHARLES KIMBALL FLINT (VI.), *Waban.* A Photometric Investigation in Interior Illumination. (With H. E. DART.)
- LEONARD S FLORSHEIM (I.), *Chicago, Ill.* An Investigation of Turn-tables.
- EUGENE STILLMAN FOLJAMBE (XIII.), *Denver, Col.* Speed and Power Trials of the Steamship "Gloucester." (With R. W. WIGHT.)
- HARRY GILMAN FOLSOM (VI.), *Honolulu, Ter. of Hawaii.* Test of a Small Single-phase Induction Motor.
- MORTIMER BRISTOL FOSTER (VI.), *Boston.* An Investigation of a 16 Kilowatt Constant Current Transformer. (With F. R. C. BOYD.)
- FREDERICK WILLIAM FREEMAN (III.), *West Newton.* The Relations between the Physical Properties and the Micro-structure of a Low-carbon Steel when Annealed in Air, Carbon Dioxide, Carbon Monoxide, and Water Gas.
- ANNA BILLINGS GALLUP (VII.), *Ledyard, Conn.* An Investigation by Means of the Sphygmomanometer of the Effect of Mental Work upon Arterial Blood-pressure.
- WILLIAM WARREN GARRETT (III.), *Cambridge.* The Lixiviation of a Low-grade Copper Ore. (With F. D. RASH.)
- HENRY ROBBINS GILSON (II.), *Groton.* An Investigation of the Relation between Cutting Speed and Tool Pressure on Lathe Tools. (With C. ALBISTON.)
- ROBERT RHEA GOODRICH, S.B. (II.), *Boston.* An Investigation of the Variation in the Coefficient of Friction between Leather Belting and Cast Iron with Different Speeds of Slip. (With M. W. HOGLE.)
- HARRY LAMAR GRANT (XIII.), *Covington, Ky.* A Determination of the Air Consumption of a Pneumatic Clipping Hammer.

- GRETA GRAY (IV.), *Cincinnati, Ohio*. A Design for a Villa by the Sea.
- GUSTAF EDWARD GUSTAFSON (I.), *Brockton*. A Study of the Water Power of the Charles River. (With A. G. HAYDEN.)
- DENNIS FREDERICK HALEY (III.), *Lowell*. Treatment of Tailings from a Ball-Norton Magnetic Concentrator. (With J. H. HIRT.)
- GEORGE ANTHONY HALL (IX.), *Boston*. A Study of the Development of National Banks in Massachusetts since 1880.
- CLIFFORD ROBSEN HAMMOND (VI.), *Buffalo, N.Y.* A Study of a Three-phase Motor. (With G. W. CARTER.)
- ERNEST CHIPMAN HARPER, B.A. (I.), *Sackville, N.B.* A Study of a Bascule Bridge with Rolling Counterweights.
- CHARLES HARDY HARRIS (VI.), *Natick*. An Investigation of an Eddy-Current Brake. (With J. C. WOODSOME.)
- ARTHUR GUNDERSON HAYDEN (I.), *Buffalo, N.Y.* A Study of the Water Power of the Charles River. (With G. E. GUSTAFSON.)
- HARRY RAYMOND HEALEY (X.), *Boston*. A Study of the Thermal Properties of Gasolenes and Kerosenes.
- GARABED GEORGE HEGHINIAN, A.B., S.B. (I.), *Marash, Turkey*. Specifications for an Open Freight Barge.
- LOUIS RICHARD HENRICH (IV.), *Buffalo, N.Y.* A Design for a Congregational Church.
- ALBERT WILLIS HIGGINS (X.), *Auburndale*. The Relations between the Micro-structure and Physical Properties of Car-axle Steel. (With F. W. COBURN.)
- JULES HECTOR HIRT (III.), *Brookline*. Treatment of Tailings from a Ball-Norton Magnetic Concentrator. (With D. F. HALEY.)
- HARRY AUGUSTINE HODGDON (II.), *Medford*. A Design of a Heating and Ventilating System for the Rhode Island State House. (With A. H. WILSON.)
- MILTON WARD HOGLE (II.), *Rochester, N.Y.* An Investigation of the Variation in the Coefficient of Friction between Leather Belting and Cast Iron, with Different Speeds of Slip. (With R. R. GOODRICH.)

WILLIAM GORDON HOLFORD (IV.), *Hazardville, Conn.* A Design for a Gymnasium for a Small University.

LEWIS WINSLOW HORNE (XIII.), *Malden.* Speed and Power Trials of the Steamship "James S. Whitney." (With R. S. LITTLEFIELD.)

AUSTIN TABER HYDE (X.), *Waltham.* An Investigation of Willson's Process for Obtaining Ammonia from the Atmosphere by Means of Nitrides.

GEORGE TAYLOR HYDE, B.S. (IV.), *Montreal, Que.* A Design for a Bell Tower of Steel and Terra-cotta Construction.

FREDERICK DUBOIS INGALLS (II.), *Kingston, N. Y.* A Design and Study for the Heating and Ventilation of a Theatre.

ALONZO KEYT ISHAM (II.), *Cincinnati, Ohio.* An Investigation of the Transverse Strength of Granite. (With G. W. ALLEN.)

ARTHUR CRAWFORD JEWETT (II.), *Toledo, Ohio.* The Line of Resistance of the Masonry Arch. (With W. M. CURTIS.)

CARL FRANCIS JOHNSON (II.), *Milwaukee, Wis.* The Speed Variation and the Action of the Reciprocating Parts of a 36 Horse-power Otto Gas Engine. (With L. D. CHANDLER.)

WILL GHOST KELLEY (VI.), *Burlington, Ia.* Test of a Thomson Three-phase Recording Wattmeter. (With H. H. KENNEDY.)

HERBERT HARLEY KENNEDY (VI.), *South Framingham.* Test of a Thomson Three-phase Recording Wattmeter. (With W. G. KELLEY.)

KING HARDING KNOX (VI.), *Baton Rouge, La.* A Test of a Constant Current Transformer. (With W. I. STURTEVANT.)

DONALD ALEXIS KOHR, Ph.B. (V.), *Columbus, Ohio.* An Indirect Determination of the Solubility of Difficultly Soluble Salts, by the Help of the Mass-action Law.

THEODORE FERDINAND LANGE (I.), *Springfield.* A Plan for Abolishing the Grade Crossings on the Old Colony Railroad at Harrison Square and Vicinity. (With L. H. BIGELOW.)

ELLIS FULLER LAWRENCE (IV.), *Cambridge.* A Design for a Combined Art Museum and Library for a Small City.

JAMES BRADFORD LAWS (IX.), *Cincinnati, Ohio.* A Statistical

Study of the Negroes of Cinclare Central Factory and Calumet Plantation, Louisiana.

CHARLES THAYER LINCOLN (V.), *Boston*. The Synthesis and Properties of Phenolquinolineine.

ROBERT STANLEY LITTLEFIELD (XIII.), *Somerville*. Speed and Power Trials of the Steamship "James S. Whitney." (With L. W. HORNE.)

HARRY JOHN LOHBILLER (II.), *Jamaica Plain*. Experiments on the Flow of Gases in a Chimney.

RALPH STOODLEY LORING (I.), *Somerville*. An Investigation of Wind-bracing in Two Steel-frame Buildings.

THOMAS MASON LUNAN (V.), *Andover*. The Estimation of Small Quantities of Arsenic in Fabrics.

OTTO GERHARD LUYTIES (II.), *New York, N. Y.* Some Experiments on Pivot Friction.

ALLEN BOYER MCDANIEL (IV.), *New Dorchester*. A Study of Wind-pressure and Wind-bracing in Tall Buildings.

HARRY PEAKE McDONALD, JR. (I.), *Louisville, Ky.* A Design for a Structural and Ornamental Iron-works.

GRACE MACLEOD (V.), *Cambridge*. A Study of the Condensation of Chloroform and Benzene in the Presence of Aluminium Chloride.

HECTOR MCNEIL (I.), *Dorchester*. A Study of a Ferry Bridge.

HENRY CHARLES MARCUS (III.), *Menlo Park, Cal.* On the Milling of a Nova Scotia Gold Ore, with Canvas-table Treatment of Fine Tailings.

CHARLES EVERETT MARTIN (IV.), *Antrim, N. H.* A Design for a Steel-framed Grand Stand.

WALTER IRVING MARTIN (I.), *Chicago, Ill.* Determination of the Coefficient of a Two-foot Suppressed Weir. (With L. A. CROWELL.)

FREDERIC ICKES MERRICK (IV.), *New Brighton, Pa.* A Design for a City Residence.

LESLIE EATON MERRILL (II.), *Haverhill*. Comparative Tests of Standard Injectors under Varying Conditions. (With R. E. SIMONDS.)

- BENJAMIN MILLER (VI.), *Cincinnati, Ohio*. A Test of the Plant of the United States Steel Company. (With J. McC. PERKINS, Jr.)
- LEWIS ARTHUR MILLER (I.), *North Easton*. A Study of the Rolling-lift Bridge at the South Terminal, Boston.
- STUART BERWICK MILLER (X.), *Cambridge*. A Study of the Specific Heats of Glycerine Lyes and Crude Glycerine.
- GEORGE LEROY MITCHELL, B.S. (VI.), *Boston*. An Investigation of a Telephone Transmitter.
- PHILIP WYATT MOORE (II.), *Brookline*. Tests on an Oil Engine. (With P. H. PARROCK.)
- ROBERT BASS MORTON, B.S. (VI.), *Randolph, Vt.* A Study of a Wagner Single-phase Induction Motor. (With W. I. BICKFORD.)
- RAY MURRAY (I.), *Boston*. Experiments on the Loss of Head due to Sudden Enlargement in Pipes forming an Angle. (With C. L. B. ANDERSON.)
- WILLIAM JESSE NEWLIN, B.A. (II.), *Port Carbon, Pa.* An Investigation of Chimney Draft.
- LESTER ALBERT NIMS (I.), *Keene, N.H.* An Investigation of Systems of Water Supply for Railroads.
- ALFRED DEWITT NUTTER (I.), *Chelsea*. A Design for a Steel Truss Bridge over the Boston & Maine Railroad in Chelsea.
- JULIUS EDWARD OBER (V.), *Boston*. The Coagulation of Colloidal Arsenious Sulphide Solutions.
- DANIEL LEIGHTON ORDWAY (V.), *Newton Centre*. The Coagulation of Colloidal Metal Solutions.
- PERCY HARRY PARROCK (II.), *Youngstown, Ohio*. Tests on an Oil Engine. (With P. W. MOORE.)
- LANGDON PEARSE, A.B. (I.), *Roxbury*. Investigation of a Two-hinged Steel Arch for a Highway Bridge.
- JOHN MCCLARY PERKINS, Jr. (VI.), *Arlington Heights*. A Test of the Plant of the United States Steel Co. (With B. MILLER.)
- OLIVER HAZARD PERRY, Jr. (XIII.), *Lowell*. Progressive Speed Trials of the Ocean Tug "James Woolley."
- ASHTON CLIFFORD PERSONS (V.), *Winsted, Conn.* The Action of Zinc on Organic Halides in the Presence of Ethyl Acetate.

- ANTHONY WINFRED PETERS (I.), *West Roxbury*. The Determination of the Coefficient of Discharge of an Inward Projecting Tube. (With E. J. PROULX.)
- JOSEPH ERNEST PHILBRICK (X.), *Roxbury*. The Determination of Sulphur in Crude Illuminating Gas.
- PRESTON PLAYER, A.B. (II.), *Boston*. Experiments on Explosive Mixtures of Gas and Air under Different Initial Pressures. (With W. WHIPPLE.)
- PHILIP ARTHUR POTTER (II.), *Springfield*. The Influence of Moisture on the Transverse Strength of Spruce Timber.
- ELZEAR JOSEPH PROULX (I.), *Holyoke*. The Determination of the Coefficient of Discharge of an Inward Projecting Tube. (With A. W. PETERS.)
- FRANCIS WILLARD PUCKEY (IV.), *Wilkesbarre, Pa.* A Design for a Suburban Residence on Long Island.
- JAMES RUSSELL PUTNAM (II.), *Newton Centre*. An Investigation of the Flow of Air through Orifices. (With W. J. SWEETSER.)
- FRANK DILLMAN RASH, A.B. (III.), *Earlington, Ky.* The Lixiviation of a Low-grade Copper Ore. (With W. W. GARRETT.)
- WALTER AUGUSTINE READ (XIII.), *Boston*. Rudder Experiments on the Steamer "Guardian." (With J. A. ROSS, Jr.)
- THOMAS FREDERICK EUGENE REARDON (VI.), *Wellesley*. An Investigation of the Variation of the Tensile Strength of Bare Aluminium Wire while carrying Current. (With R. H. BOLSTER.)
- RALPH CHANDLER ROBINSON (V.), *North Andover*. A Systematic Method of Procedure for the Qualitative Detection of Mercury, Gold, Platinum, Palladium, Osmium, Selenium, and Tellurium.
- JOHN ALEXANDER ROSS, Jr. (XIII.), *Hampton, N.H.* Rudder Experiments on the Steamer "Guardian." (With W. A. READ.)
- CARL ROSSMASSLER (XIII.), *Germantown, Pa.* The Effect of Bilge Keels on Rolling, as determined from the Study of a Model.

- ALLAN WINTER ROWE (X.), *Gloucester*. The Analytical Constants of Tallow, Neat's-foot and Horse Oils.
- SAMUEL WINTHROP ST. CLAIR (IV.), *East Milton*. A Design for a Villa on a Tropical Island.
- GEORGE VICTOR SAMMET (V.), *Jamaica Plain*. An Experimental Investigation of the Relation of the Heat of Solution of Dissociated Substances to the Effect of Temperature on their Solubility and Dissociation.
- WILLIAM JAMES SAYWARD, B.S. (IV.), *Woodstock, Vt.*. A Design for a Savings Bank for a City of Thirty Thousand Inhabitants.
- BART ERNEST SCHLESINGER, A.B. (V.), *Brookline*. The Electrolysis of Hydrochelidonic and Adipic Acids.
- WALTER SCOTT (II.), *Lawrence*. A Dynamometer Test of a Motor Carriage.
- STANLEY COLLAMORE SEARS (III.), *Winthrop*. The Formation Temperature of a Blast Furnace Slag as affected by the Combined Replacement of Lime and Silica by Alumina.
- EDWARD SEAVER, Jr. (II.), *Roxbury*. Transverse Tests on Composite Beams of Concrete and Twisted Steel.
- FREDERIC HENRY SEXTON (III.), *Billerica*. The Effect of Heat Treatment upon the Physical Properties and Micro-structure of Cast Steel.
- CLIFFORD HOPKINS SHIVERS (IV.), *Woodbury, N. J.* A Design for a Sanitarium for Consumptives in the Mountains.
- GEORGE PERCIVAL SHUTE (X.), *Malden*. The Analysis of Chimney Gas by Means of the Gas-balance.
- ROLAND EMERSON SIMONDS (II.), *Winchester*. Comparative Tests of Standard Injectors under Varying Conditions. (With L. E. MERRILL.)
- NORMAN LOCKE SKENE (XIII.), *Roxbury*. Progressive Speed Trials and Service Test of a Gasolene Launch.
- FREDERICK WILLIAMSON SMITH, B.A. (I.), *Baltimore, Md.* A Design for a Turn-table and Round-house.
- SUMNER IVES SMITH (VI.), *Elkhart, Ia.* An Investigation of the Relation of the Voltage, Capacity, and Efficiency of Storage Batteries to the Temperature.

- RALPH HAMILTON STEARNS (XI.), *Dorchester*. A Study of the Flow of Water in the Proposed Cape Cod Canal.
- WILLIAM ISAAC STURTEVANT (VI.), *Ogden, Utah*. A Test of a Constant Current Transformer. (With K. H. KNOX.)
- WILLIAM GEORGE SUCRO (I.), *Catonsville, Md.* A Plan for Abolishing the Grade Crossing on the Boston & Maine Railroad at Franklin Park, Revere. (With F. D. CHASE.)
- ALBERT FREDERICK SULZER (X.), *Chicago, Ill.* The Analysis of Varnishes.
- WILLIAM JORDAN SWEETSER (II.), *Newton Highlands*. An Investigation of the Flow of Air through Orifices. (With J. R. PUTNAM.)
- ALEXANDER JENIFER TAYLOR, C.E. (XI.), *Wilmington, Del.* A Design for a System of Sewage Disposal for Saxonville.
- ARTHUR KINGSLEY TRENHOLME, A.B. (IV.), *Westmouth, Que.* A Design for a Club-House.
- CHARLES GILMAN TUFTS (X.), *Arlington Heights*. A Study of Cholesterol and Phytosterol.
- WILLIAM WRIGHT WALCOTT (IX.), *Natick*. A Study of Infant Mortality in Massachusetts, 1870-99.
- FRED BIBBER WEBSTER (XIII.), *Cambridge*. The Axial Oil Machine. (With A. L. WEIL.)
- ASHER LOWENSTEIN WEIL (II.), *New York, N.Y.* The Axial Oil Machine. (With F. B. WEBSTER.)
- JOHN FRANK WENTWORTH (XIII.), *Rochester, N.H.* A Design of a Speed Launch.
- WILLIAM WHIPPLE (II.), *Massapequa, N.Y.* Experiments on Explosive Mixtures of Gas and Air under Different Initial Pressures. (With P. PLAYER.)
- HARRY RANSOM WHITE (XIII.), *Arlington Heights*. Speed and Power Trials of the Steamship "Boston."
- RALPH WHITMAN (I.), *Roxbury*. A Study of the Different Forms of Cranes.
- ROGER WILLARD WIGHT (XIII.), *Natick*. Speed and Power Trials of the Steamship "Gloucester." (With E. S. FOLJAMBE.)

WALDO GILMAN WILDES (I.), *Melrose Highlands*. A Comparison of Trusses and Plate Girders for Spans of Less than 100 Feet.

CHARLES FRANKLIN WILLARD (II.), *Marlboro*. Progressive Speed Trials of Tug "Violet H. Raber."

ROBERT LONGFELLOW WILLIAMS (II.), *Chelsea*. A Comparison between Governing a Steam Engine by Throttling and by Varying the Cut-off.

ARCHIBALD HENRY WILSON (II.), *Lawrence*. A Design of a Heating and Ventilating System for the Rhode Island State House. (With H. A. HODGDON.)

GEORGE TRUMAN WILSON (II.), *Columbia Falls, Me.* A Series of Tests upon the Heating and Ventilating Plant of a Theatre, combined with a Design for a System of Ventilation for an Office Building. (With H. T. CHANDLER.)

SAMUEL LAMSON WONSON, A.B. (I.), *Everett*. A Design for a Three-hinged Masonry Arch.

HOWARD IRVING WOOD (V.), *Rockville, Conn.* A Systematic Method of Procedure for the Qualitative Detection of Beryllium, Indium, Uranium, Titanium, and Zirconium in the Presence of Common Metals.

LEONARD PERCY WOOD (I.), *Brooklyn, N.Y.* An Electrically Driven Chronograph.

JAMES CHADBOURNE WOODSOME (VI.), *Dorchester*. An Investigation of an Eddy-current Brake. (With C. H. HARRIS.)

CANDIDATES AWARDED THE DEGREE OF BACHELOR OF SCIENCE DURING THE YEAR 1900-1901

HARRY BISHOP CHALMERS (X.), *New York, N.Y.* A Comparison of Various Methods of Testing the Strength of Glue.

JOSEPH SIMONDS CROSWELL (II.), *North Cambridge*. A Study of the Coefficient in the American Roller Bearing.

CLARA ISABEL DURGIN (V.), *Belmont*. An Attempt to prepare Tetramethylene from Ethylene Bromacetate.

PHILIP ROLAND FRENCH (V.), *Roxbury*. The Occurrence of Formic Aldehyde as a Common By-product in Organic Oxidation.

- ALBERTO PRIMITIVO GONZALEZ (III.), *Monterey, N.L., Mexico*.
An Investigation of the Coking Properties of a Mexican Coal.
(With S. S. MADERO.)
- JOHN HEBER LARRABEE (I.), *Melrose*. A Design for a Swing
Drawbridge.
- BENJAMIN GOULD MACINTIRE (V.), *Roxbury*. A Study of the
Decomposition of Benzene Diazonium Salts with Pyrocatechiu.
- SALVADOR SILVESTRE MADERO (III.), *Parras, Mexico*. An Inves-
tigation of the Coking Properties of a Mexican Coal. (With
A. P. GONZALEZ.)
- HENRY CURTIS MORRIS (III.), *New York, N.Y.* A Study of the
Roasting of Different Grades of Tellurium Ores.
- BURT RANSOM RICKARDS (V.), *Melrose*. A Study of Certain Proc-
esses of Fermentation and a Method for the Identification of
the More Important Carbohydrates and Glucosides.
- ALICE VIRGINIA WILSON, A.B. (V.), *Lenoir, N.C.* An Attempt
to prepare Hexamethylene.

EDITORIALS

The completion of the Walker Memorial Gymnasium Fund of \$100,000 on the Graduation Day of the class of 1901 gave a lustre to that occasion outshining even the radiant faces of the new Bachelors of Science; for the securing of the stipulated amount a month in advance of the time set by the Corporation was due to the very generous and unexpected action of this new-fledged class in pledging, on the morning of their graduation, the last five thousand dollars needed to make the fund complete. It was an admirable way for these young men to signalize their last day as undergraduates, and gave sure proof that the class appreciated its obligations to the college which, later in the day, gave them formal license as bearers of the Institute's professional name and custodians of its teaching reputation.

Young graduates rarely appreciate the fact — which is true of any university, technological school, or college of the first rank — that they are debtors to their Alma Mater, not only for money outlays far in excess of their tuition fees, but also for the more intangible, but no less real, benefits resulting from long-established corporate reputation and dignity of name, high professional ideals, and scholarly breadth of training. Yet money alone cannot discharge the debt for these benefits, which are themselves maintained and augmented only by the active interest and loyal service of the alumni; and hence the Institute may rightly expect devotion to its interests on the part of its graduates.

This solidarity and mutual dependence of Institute men is markedly recognized in this very Walker Memorial to which the class of 1901 has made so generous a contribution; for the building to be erected in memory of the splendid President who gave his life to the up-building of the Institute of Technology is not to

be a simple gymnasium for the promotion and preservation of the physical health of its students, but it is also to be a social gymnasium for the preservation of their moral health and the promotion of their social efficiency. It is coming more and more to be recognized in education that "Manners makyth Man"; and, whether it be a kindergarten or the Massachusetts Institute of Technology, an educational institution has as distinct a duty toward the improvement of manners and morals as toward the development of the intellect. Learning without culture suggests a machine without oil, or in too many cases a machine — though well finished and otherwise effective — without any motive power wherewith to make it serve its purpose in the world.

Therefore, this memorial gymnasium, to fulfil its purpose, must be a place wherein will be cultivated amongst Institute graduates all those qualities of "all-roundness," grace, courtesy, and manliness, so well exemplified by General Walker, and wherein will be learned the lesson that these things also are essential to a liberal education.

To do this will take more than the \$100,000 already raised; but to make the memorial less than complete would be to fail in real honor to General Walker. There can be no doubt, therefore, that this additional amount will be subscribed, — partly by a further contribution from those past students of the Institute who have been waiting to see the project an assured success before sending in their contributions, and partly from those other friends of General Walker and of the Institute, who will be glad to show their admiration and appreciation in this substantial and enduring fashion. Every dollar that now comes in will enable the authorities of the Institute to bring the Walker Memorial more nearly to that ideal, for promoting the health and manliness of young men, which would be most pleasing to the late President, as well as to our present active and far-seeing executive, who has so heartily and vigorously assisted the efficient Walker Memorial Committee in their labor of love.

An added influence over students in the direction of higher standards of life will, it is hoped, come through the Technology Chambers, soon to be built on what was formerly the Irvington Oval. This enterprise, though not directly under the control of the Institute authorities, has already their hearty support, and will probably be subject to their indirect supervision. To place students coming from a distance in boarding-houses has never seemed a satisfactory disposition of them ; yet to establish dormitories, especially in a large city, would involve added difficulties and dangers that the Institute cannot at present assume. Sometimes a young man coming from another part of the country to Boston, to pursue his studies, has the good fortune to find a home in the house he chooses as his boarding-place ; but these instances are, unfortunately, rare. The social atmosphere of the usual boarding-house is never stimulating, and is often actually unhealthful to a youth who is obliged to find in it the social intercourse so essential to his happiness, and which, as a stranger, he can find nowhere else. Located in such a place as the Technology Chambers, he will not only be sure of the companionship of a hundred or more men of kindred interests, but will be in a position to meet many of their friends, and to select from among them a rapidly widening circle of associates.

The various Alumni Associations are doing an admirable work in this same direction by furnishing a social starting-point for Institute men who go, as strangers, to the cities in which such associations are located. An Institute man, therefore, makes a very serious mistake if he does not — in going to Chicago, New York, Washington, or such other city as may have the good fortune to possess an Institute Association — ally himself with it, take active part in its work, and secure all the advantages which are certain to come from wide acquaintance among his fellow-collegians. All the associations are most cordial in welcoming new men, and are increasingly active in promoting the welfare of the Institute itself. Moreover, these roots, spreading now into every part of the country,

are destined to become more and more the firm foundations and sound nourishers of their mother institution, tucked away in a far corner of New England.

President Pritchett set an admirable example, not only to the young men of the Institute, but to the whole city of Boston, in his "fifty-four and one-half cent" dinner which he gave to about fifty undergraduates at the Technology Club in May. As is well known, Bostonians are among the greatest public diners-out in the world; but, as Dr. Pritchett truly said, they generally pay much good money for a very poor time. This is because they permit the food to overshadow the good fellowship; because they waste the best part of the evening in prolonged eating, leaving only its dregs for talk and companionship; because they weary their jaws and dull their wits with ten or fifteen heavy courses instead of satisfying their appetites with four light ones, leaving their intellects clear and their tempers sweet for rational conversation. Men of middle age, who can afford to trifle with their purses and their digestions, may in their slavery to tradition keep up this expensive and lengthy feeding; but the younger men should set them a better example, and it is greatly to be hoped that the President's dinner will mark the beginning of a genuine *Commerce* among students and among alumni,—a real exchange of good fellowship and of good wit, not a competitive trial of the digestive organs.

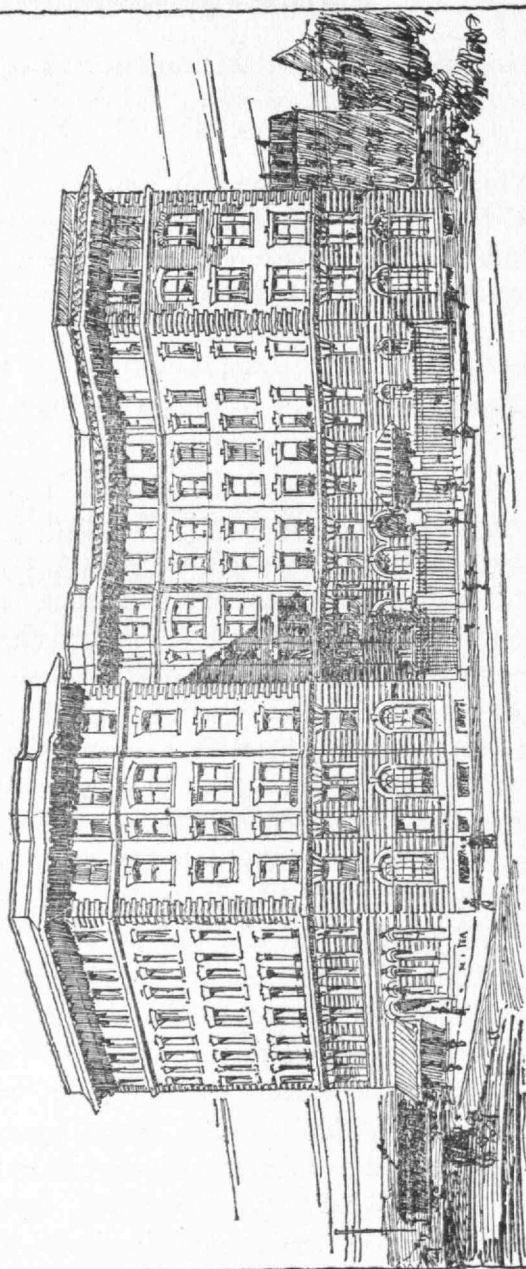
TECHNOLOGY CHAMBERS

While it would be obviously unwise, even were it practicable, for the Institute to inaugurate a system of dormitories such as is necessary in a college located in a country town, it has long seemed desirable that some means should be found for bringing a number of the students together in a well-planned building where they might have good food, well-lighted and heated bedrooms, ample bathing facilities, and proper rooms for study.

This need seems likely to be met, in a degree at least, by the proposed Technology Chambers which are immediately to be begun on what was known as the "Irvington Oval," bounded by Huntington Avenue, Irvington Street, an extension of St. Botolph Street, and the grounds of the Huntington Avenue Station of the Boston and Albany Railroad. This land, covering 16,000 square feet, has been purchased by the "Technology Chambers Trust," and a building, seven stories in height, and designed to accommodate 178 students, is to be built thereon after excellent plans made by Walter H. Kilham, '89.

The building will front upon Huntington Avenue and there will be an entrance, as well as one or two stores, upon that side; but the "living frontage" of the building will be toward the south, on St. Botolph Street, most of the rooms looking out, from that side, on a central court-yard 80 feet wide, separated from the street by a high, ornamental grille with handsome stone posts and lanterns. This court-yard will be attractively laid out as a lawn with masses of shrubbery and flower-beds, separated by broad granolithic walks leading up, by broad flights of steps shaded by glass marquises, to the tenants' private entrances.

WALTER H KILHAM ARCHITECT



Technology Chambers. Rear Elevation

In the basement, in addition to laundry, boiler rooms, etc., will be a large swimming tank, a gymnasium, and, possibly, hand-ball courts for the use of the young men occupying the chambers.

The first floor will contain, in addition to a number of bedrooms and studies, a handsomely appointed dining-room, a billiard-room, and a hall for meetings and general social purposes.

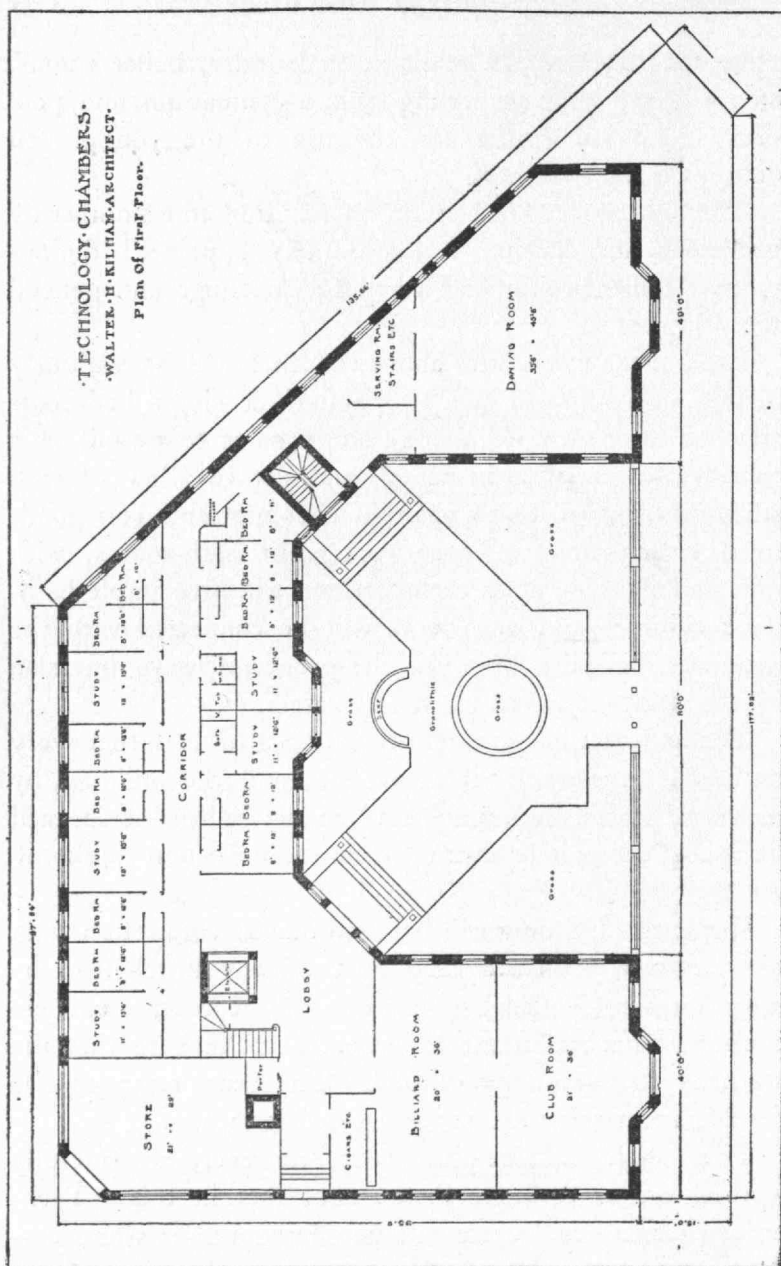
Each of the five stories above the first will be variously divided into suites of one, two, and three single bedrooms attached to or grouped about a study, so as to permit of a considerable variation in rental, and yet to allow of each student having at least a share in a comfortable and good-sized sitting-room. Three groups of bath-rooms, with tubs and showers, upon each corridor, will give ample bathing facilities; and the floors will be connected with the entrances, not only by wide, fire-proof stairways, but also by the latest improved electric elevators.

The architect has so carefully arranged his plan that every room will have ample light and air; and the building, by means of practically a blank wall on the railroad side, will be almost completely shut off from the noise and smoke of the Boston and Albany Railroad.

While this building will have no official connection with the Institute, it is proposed by President Pritchett to arrange for a semi-official supervision of the rooms, and especially of the restaurant, in order to make sure that the students shall secure good food. The exact arrangements for this supervision are not as yet decided upon.

The whole scheme has been, however, so carefully worked out as to leave little doubt that in this "Technology Chambers" there will be offered a place where students, at a cost very little, if any, greater than is now in-

TECHNOLOGY CHAMBERS.
WALTER H. KILHAM ARCHT.
Plan of First Floor.



volved in living at a boarding-house, may secure far better rooms, more wholesome food, pleasanter surroundings, a more convenient location, and, best of all, the companionship, stimulus, and *esprit de corps* of other Institute young men rather than the depressing and often demoralizing atmosphere of the usual lodging-house.

The trustees of the Chambers are Mr. Francis Peabody, Jr. and Mr. George E. Cabot, men of wide experience in such matters. The broker in the transaction was Mr. Joseph Balch, and the subscribers to the trust are among the leading men of business in the city. Much credit is due Mr. F. Murray Forbes, of Mr. Balch's office, for his zeal and persistency in developing the scheme and in enlisting the interest of Institute men, and of leading financiers.

It is planned that the building shall be ready for occupancy at the opening of the fall term, in September, 1902; and there is little reason to doubt that long before that time every room in the proposed Chambers will be engaged.

WALKER MEMORIAL

The Walker Memorial Fund, which amounted to about \$40,000 at the beginning of 1901, rose to the neighborhood of \$60,000 during the first three months of the year. An aggressive attempt to complete the work was initiated by President Pritchett at the dinner of the North-western Association on March 16, and this effort took the practical form of a level \$30 subscription. During April and the early part of May \$30 subscription cards were widely circulated by the class and fraternity associations. On May 15 the committee issued a deficiency appeal for the \$30,000 still lacking, and accompanied it by a pamphlet showing the pro-

visional plans for the building, which had been presented to the Institute authorities by members of the Architectural Department. The response to this final appeal was generous beyond the hopes of the committee. \$20,000 was subscribed in less than two weeks. These results were so encouraging that every effort was made to complete the total subscription by June 4, in order that the result might be announced at the graduation exercises. Thanks to the hearty support of certain of the past students, and in particular to the splendid spirit of the class of 1901,—which raised over \$5,000 in less than half an hour,—this result was attained, and the subscription of \$100,000 was completed a month before the date set by the Corporation. More significant than the sum contributed is the fact that the number of contributors is over fifteen hundred.

According to the original plan of the Walker Memorial Committee, the sum to be raised by the past students was to cover all the expense of erecting the gymnasium building; while the land, as well as the funds for the maintenance of adequate instruction in physical culture, representing a further capital of at least \$150,000, were to be furnished by the Corporation. It soon appeared, however, that a memorial building, including the necessary provisions for gymnastic work and the desired social features as well, could scarcely be built for the sum originally mentioned. Additional subscriptions from Institute men will therefore be very grateful, although no further systematic efforts are to be made to secure them. The committee, however, feel confident that the interest of friends of General Walker and of Technology, outside of those who have actually been connected with the school, will supply the \$50,000 or \$75,000 additional required to make the Walker Memorial exactly what it should be.

C.-E. A. WINSLOW, *Secretary*.

EDITORIAL FROM THE BOSTON "MEDICAL AND SURGICAL JOURNAL," JAN-
UARY 10, 1901

PHYSICAL CULTURE

However it has come about, whether through the increasing devotion to athletics or for other reasons, it is clear that physical culture in the broad sense is occupying a more and more conspicuous place in education. This must certainly be regarded as an unqualified good, and chiefly because it is based on a system which may justly lay claim to a scientific basis. Physical training is gradually but surely becoming rational. The excesses to which competitive athletic events are always likely to lead will surely be modified by a knowledge of the physiological effects of training. Both directly and indirectly the present zeal for physical culture, designed not only to make the strong stronger, but also the weak strong, is doing much toward the general development of the masses of young men and women. Institutions have, however, been slow in completely recognizing the dignity of this branch of education by establishing a definite department under the jurisdiction of a competent head. It is, therefore, of particular interest at this time that the Massachusetts Institute of Technology has taken action to install a new department devoted to physical culture. The formal announcement of this fact was made by President Pritchett at the annual dinner of the Alumni Association recently held in Boston. It was announced that the corporation had voted to give the land for the building, which is to be a memorial to the late General Walker, former President of the Institute. In this building is to be established the new department, provided the necessary endowment fund can be raised, under the charge of "a man who shall be able to do for the physical side of the students what the heads of other departments now do for the intellectual side." It is sincerely to be hoped, and there is small doubt the hope will be realized, that this somewhat unique department of a great educational institution may be generously maintained. It will prove not only of service to the institution with which it is connected, but will undoubtedly serve as a stimulus toward the establishment of similar departments elsewhere. The time is undoubtedly ripe for just this line of work, and we are gratified to see that so worthy a memorial is to be erected to the lamented President of our most conspicuous technical school.

The tendency everywhere apparent is further shown by the recent meeting in New York of the various physical directors of the larger gymnasiums connected with our schools and colleges. The strength which comes from organization will no doubt show itself by renewed and systematic attempts toward raising the standard of this department of school and university work. The very general introduction of physical training into the public schools has already been productive of much benefit to the pupils. The idea, recently suggested for the Brookline, Mass., schools, of giving special treatment to pupils of imperfect physique, is also unquestionably a step in the right direction. The whole movement toward bringing about a symmetrical physical development, beginning with the very young, is in every way commendable.

In the hands of competent men there is small danger of attaching undue importance to this fundamental branch of a child's education.

GENERAL INSTITUTE NEWS

CORPORATION NOTES

The two hundred and eighty-eighth meeting of the Corporation was held at the Institute April 3, 1901. Appointments were confirmed, and the following candidates awarded the degree of Bachelor of Science: in the Department of Mining Engineering and Metallurgy, Alberto Primitivo Gonzalez, Salvador Silvestre Madero, Henry Curtis Morris; in the Department of Chemistry, Benjamin Gould Macintire; and, in the Department of Mechanical Engineering, Harry Bishop Chalmers. Reports of Visiting Committees were presented for the Departments of Mechanical Engineering, Architecture, Chemistry and Biology, Physics and Electrical Engineering.

The two hundred and eighty-ninth meeting was held at the Institute on Friday, May 31, 1901. The following appointments were made: Associate Professor Charles F. A. Currier, Professor of History; Associate Professor George T. Dippold, Professor of Modern Languages; Associate Professor Eleazer B. Homer, lecturer in Architecture; Associate Professor William Z. Ripley, Professor of Sociology and Economics; Assistant Professor William H. Lawrence, Associate Professor of Architecture; Assistant Professor William L. Puffer, Associate Professor of Electrical Engineering. The following Assistants were appointed Instructors: Charles B. Breed, in Civil Engineering; William S. Newell, in Mechanical Engineering; Harrison W. Smith, in Electrical Engineering; Maurice DeK. Thompson, in Physics; and C.-E. A. Winslow, in Biology. Mr. Reginald R. Goodell was appointed Instructor in Modern Languages in place of Charles H. L. N. Bernard, resigned, and Mr. Charles E. Locke, Instructor in Mining Engineering.

The following Assistants were appointed: W. I. Bickford, H. E. Dart, and Clinton M. Dearden, in Physics.

Messrs. James P. Stearns, Elliot Cabot Lee, and Lucius Tuttle were elected to membership in the Corporation.

Degrees were conferred on one hundred and ninety-two applicants for the Bachelor's degree, as elsewhere reported. Four candidates were awarded the degree of Master of Science, and twelve the certificate of the Lowell School of Design.

It was voted, on recommendation of the Executive Committee, to approve the construction of a building for electrical engineering, at a cost not exceeding \$170,000 for the building and \$100,000 for the equipment.

Reports of Visiting Committees were presented for the Departments of Mathematics; History, Literature, and Economics; Modern Languages; Civil Engineering; and Mining Engineering.

LOWELL SCHOOL OF DESIGN

After a service of twenty-nine years, Professor Kastner has retired from the Lowell School of Practical Design; and the school is to be reorganized under Mr. C. Howard Walker upon a broader basis and in closer relations with the Department of Architecture at the Institute. Instead of being, as heretofore, a school supported entirely by the Lowell Institute, and with gratuitous attendance, the students will be required to pay a fee; while the Lowell Institute will for the present continue its assistance to the school by providing a number of free lectures, with the expectation that the school will ultimately become self-supporting.

Professor Kastner has devoted a large part of his life to this school, doing excellent work as a pioneer in practical design in this country. He is now going home to France, and has earned a right to rest.

Mr. C. Howard Walker, the director of the reorganized school, which will be called THE MASSACHUSETTS SCHOOL OF DESIGN, for History and Practice of Design of the Industrial Arts, is an architect of national reputation, having, in partnership with Mr. Thomas R. Kimball, '89, designed all the buildings for the Trans-Mississippi Exposition at Omaha in 1898. He was for a number of years lecturer at the Institute on the History of Ornament, and will resume these lectures at the beginning of the school year

1901-1902. Mr. Walker will be assisted by Miss Katharine B. Child.

Up to this time, owing to the original direction given to the work of the Lowell School of Design, the instruction there has been confined almost wholly to the designing of textile goods, carpets, and wall papers. It is proposed in the reorganized school to take up the art of designing more broadly, so as to cover the whole field and to make the graduates of the school fully conversant with the history and underlying principles of ornament. This will be more clearly shown by the outline of the course of study which follows:—

First Year

First Term.—Drawing and coloring from copy. Designing geometric ornament. Analysis of elemental patterns. History of ornament.

Second Term.—Analysis of color. Designing simple ornament in historic styles, repeats, etc. Application of simple ornament to prints, textiles, etc. History of ornament continued.

Second Year

First Term.—Development of ornament. Adaptation to special forms and materials: textiles, prints, carpets, wall papers, woven materials, inlays, mosaics, etc. History of arts in which ornaments are used, and their application. Drawing from object.

Second Term.—Development and application of ornament: painted ceramics; book bindings; embossing; illuminating; lettering; stained glass; embroidery, laces, etc.; metal work, cloisonnés, etc. Development of color: modelled forms. History of industrial arts.

Third Year

First Term.—Study on architectural mouldings and forms. Modelling, low and high relief. Metal work: gold, silver, and bronze; gas fixtures. Woven fabrics: damasks, etc. Embossed leathers.

Second Term.—Introduction of figures into design. Furniture and interior fittings. History of industrial arts.

FACULTY NOTES

There has been a considerable increase in the number of persons fulfilling prescribed requirements for graduation at the end of the

first term or otherwise at irregular dates. It has accordingly been voted by the Faculty that recommendations be submitted to the Corporation only at the close of the school year unless otherwise provided by special vote, and that the names of all graduates be inserted in the catalogue in the year in which they receive their degree, unless otherwise provided by special vote.

The Faculty was represented at the inauguration of President Woolley, of Mt. Holyoke College, by Professor William H. Niles.

In connection with Professor Homer's appointment as lecturer, it will be of interest to state that he has been elected principal of the Rhode Island School of Design in Providence. Fortunately, he is able to continue his important lectures at the Institute on "The History of Architecture."

The Rhode Island School of Design was founded in 1877. Its purposes are: *First*, the instruction of artisans in drawing, painting, modelling, and designing, that they may successfully apply the principles of art to the requirements of trade and manufactures. *Second*, the systematic training of students in the practice of art, that they may understand its principles, give instruction to others, or become artists. *Third*, the general advancement of art education by the exhibition of works of art and art studies, and by lectures on art.

It consists, therefore, of two principal sections: the Museum for the exhibition of paintings, sculpture, and works of art, and the School for the training of artisans and art students.

In the Museum are included the picture and sculpture galleries and several smaller rooms for water-color and special exhibitions, for bronzes, and for the permanent display of photographs and prints. All of these rooms contain very valuable collections. The registered public attendance during 1900 was 16,562.

The School has been divided into five departments,—namely, the departments of Freehand Drawing and Painting, Decorative Design, including Arts and Crafts, Modelling and Sculpture, Mechanical Engineering, and Architecture,—while during the past year a Children's Department has been formed for Drawing and Modelling on Saturdays.

Classes are held during day and evening hours. During the past year the students in the day classes numbered 188, in the evening classes 310, or a total of 498 students.

The corps of instructors last year consisted of nineteen teachers and several special lecturers.

The school occupies a similar position to that of the Boston Art Museum or the Chicago Art Institute, although it has not the extensive museums of the Boston institution or the large classes of the Chicago school.

The fees are extremely moderate, \$50 for two terms of day work and \$9 for each term of night work.

The regular courses of study lead to the diploma of the school at the end of four years' study; but special students are allowed to enter any course for which they show sufficient preparation, it being the aim of the school to assist and

benefit the workmen employed in various industries as well as the student who can devote his entire time to school work.

ADVANCED DEGREES AND FELLOWSHIPS

The resources now available under the Austin will make the work of the Faculty Committee on advanced degrees and fellowships continually more important and comprehensive. For the coming year travelling fellowships are awarded to John W. Brown, James H. Walton, Assistants in Chemistry, and Maurice DeK. Thompson, Instructor in Physics. Messrs. Brown and Walton will study at the University of Leipzig. The foreign fellowships now held by Messrs. Blanchard, Chapin, and Sherrill, as well as that of Mr. Coffin, for work at Clark University, are continued. Changes in the rules governing fellowships and scholarships are now under consideration by the Faculty.

GRADUATE COURSES

Important progress has been made in the development of graduate courses in certain departments. A definite programme has been approved for the graduate courses in Mining Engineering and Metallurgy, of which fuller details are shown in the new circular of that department. More recently similar programmes of graduate study have been adopted in Chemistry and Electrical Engineering. Following are statements relative to advanced work in Electrical Engineering and in Mining Engineering and Metallurgy: —

Mining Engineering and Metallurgy

The strong as well as the weak point in the profession of the mining engineer is that he has to familiarize himself with many branches of applied science, and cannot devote himself to a few and master them fully. He must not only cover certain studies of the civil and mechanical engineer, but must be well versed in chemistry as well as in mineralogy and geology.

The aim of the undergraduate course at the Institute has been and is to give the student a broad foundation in various branches

of applied science, that he may be fitted to work his way in any of the different specialties of his chosen profession. With the increased use of iron structures and mechanical appliances, the advance of applied electricity, and, lastly, the new studies opened up in the relation of properties of metals and alloys with their inner structure, the field to be covered, in order to be thoroughly grounded, has become so enlarged that it has become impossible to do this in the regular four years' course. A fifth year has become a necessity, and this has taken the form of a post-graduate course. In the undergraduate studies the principle of giving an all-round foundation for professional work will be adhered to, indicating only the post-graduate field; and the studies will be strengthened instead of being weakened by giving too many things.

While in the undergraduate course there are two options,—the general one covering mining and metallurgy, and the special one intended for students who know that they are going to devote themselves to the metallurgy of iron and steel,—in the graduate course two broad lines have been drawn, separating the professions of the mining engineer and the metallurgist. As with both branches mechanical and electrical engineering studies are of basal importance, these studies have been made obligatory. In the mining option the graduate student takes additional civil engineering work. Thus, in surveying, stress is laid upon plane-table, contour, and stadia work; in railroad work, the location, construction, and equipment of railroads in connection with field work and drawing are taken up. The stability and strength of structural designs are calculated and worked out in the drawing-rooms. No additional geological work is given, because it is believed that, with the grounding received by the undergraduate work, the student is more than sufficiently prepared to progress by individual study in mining geology.

In the metallurgical option, theoretical and applied electro-chemistry, microscopy, and heat work have been made prominent. The modern theories of physical chemistry, and especially of electro-chemistry, have furnished a new basis for metallurgical and electro-metallurgical processes with which the metallurgist has to

familiarize himself, not only by steady, but by systematic, laboratory work. The microscopical examination of metals and alloys has given entirely new views to the arrangement of the particles, which explains so many phenomena which were formerly not understood that this new science is becoming more and more an indispensable means of investigation to the metallurgist. Time-consuming laboratory work alone gives the power to do this.

A student who has given satisfaction as an undergraduate may become a candidate for the degree of Master of Science, when starting upon his post-graduate work; but it is hoped that students, even when not candidates for the higher degree, will take the fifth year, if they can afford the time and money, and be thus more thoroughly equipped to meet the increasing demands that are made upon them in the practice of their profession.

Electrical Engineering

From the early days of the Institute one of the most serious of the problems which have confronted the Faculty has been the adaptation of the four-year curriculum to meet the increasing demands of the scientific professions upon those entering them. It has been justly felt that no abatement in the time allotted to general studies could properly be made; and, while increased entrance requirements have given considerable relief, nevertheless the utmost that could reasonably be expected from the preparatory schools would not be sufficient to meet the difficulty. To increase the time required for the degree of S.B. to five years would be objectionable for various reasons; but, on the other hand, it has been evident for some time that only by a more prolonged course of study can the best possible preparation be given for professional life.

About a year since it was decided by the Department of Electrical Engineering to plan a graduate course of one year open to those holding the degree of S.B. in Electrical Engineering from the Institute, or an equivalent degree, which should be devoted to advanced instruction definitely laid out in assigned courses. Such a scheme has recently been approved by the Faculty at the same time with schemes of like character in several other departments.

The course as laid out assumes the student to be familiar with all the undergraduate work required in Course VI. It comprises an extended study of the mathematics of polyphase transmission systems, additional experimentation in the laboratory of electrical measurements, and the advanced study of direct current and alternating current machinery in the laboratory of electrical engineering. A course upon the design of stations and electrical distribution systems constitutes an important feature. Considerable time is also given to instruction in dynamo design, a course is planned in specifications and contracts, and an extended thesis must be prepared.

The studies thus far referred to are all solely graduate studies; that is, they none of them form a part of any undergraduate course. Certain undergraduate studies, principally from Courses VIII. and II., are required in the Graduate Course under consideration. Such are Fourier's Series, Heat Measurements, Electrochemistry, and also an important course in Machine Design. It is believed that the scheme as thus laid out will meet the needs of an increasing body of students who wish to obtain a fuller knowledge of Electrical Engineering than is practicable in four years, even under the most favorable circumstances.

UNDERGRADUATE COURSES

Changes in the courses in Architecture are based on the importance of increasing the time given to architectural history, and introducing the subject at the beginning of the second year,—a year earlier than heretofore. In accordance with this, provision is made for replacing French sight-reading in the second term of the first year by the course on the elements of architecture by Professor Chandler.

In Course VI. the pressure of professional studies leads to the discontinuing of Least Squares in the first term of the fourth year.

In case the plan now under consideration for advance of the entrance requirements in Modern Languages is adopted by the Faculty, important changes in all course schemes are probable. In

this connection, it may be added that the replies from the schools sending the greater proportion of applicants to the Institute indicate that the advance of language requirements is not impracticable, although differences of opinion naturally exist as to the direction that the advance should take. A special committee of the Faculty has been occupied with the construction of standard definitions of entrance requirements proposed by the Committee of the Society for the Promotion of Engineering Education.

NAVAL ACADEMY GRADUATES AT THE INSTITUTE

The advanced course in naval architecture heretofore pursued by the Naval Academy graduates, prior to commission in the construction corps, at some of the leading European institutes, is hereafter to be given these young men at the Institute. While the designers of American war vessels, in the development of the new navy, have been without superiors in the navies of the world, the government has until now been compelled to educate them abroad, owing to lack of properly equipped facilities in this country.

Rear-Admiral Hichborn some years ago entered into negotiations with the Faculty with a view to providing a course required for the cadets, and one was submitted which was regarded as satisfactory and fully meeting the requirements. Secretary Long was in favor of adopting the plan, but influences at the department operated to defeat it; and the old system was adhered to, at considerable expense to the government.

Admiral Bowles, the new constructor, has taken up the subject again; and it has been decided that all academy men selected for the construction corps in future shall be educated at the Institute, which now provides a course of lectures fully answering the needs of such education.

The first cadets to take this course will be William McEntee and William B. Ferguson, Jr., who were graduated Nos. 1 and 2, respectively, one year ago. Two additional cadets will also be chosen later from this year's class, and assigned to the course.

Since 1883 all cadets commissioned in the construction corps

have first been sent abroad for study, where they have invariably taken first rank in their classes, often composed of men many years their senior. Admiral Bowles was one of the first sent abroad, where he led his class; Constructor Gatewood, now deceased, followed him with the same record; and Constructor D. W. Taylor, who made a higher record at the Naval Academy than was ever before or since equalled in the history of the school, graduated at Greenwich with the highest honors. Lieutenant Hobson was another of these graduates.

So remarkable were the records of American cadets that the British government became sensitive a few years ago at their outstripping the Englishmen, and declined to allow them the advantages of the school. The navy then sent its cadets to the University of Glasgow and to the *École Polytechnique* at Paris, where all recent graduates of the corps have completed their education.

ENTRANCE EXAMINATIONS

Entrance examinations were held at the following places, besides in Boston and in London, Eng., where Professor H. W. Tyler took charge: Austin, Tex.; Belmont, Cal.; Binghamton, N.Y.; Buffalo, N.Y.; Chapel Hill, N.C.; Chicago, Ill.; Cincinnati, Ohio; Denver, Col.; Detroit, Mich.; Exeter, N.H.; Kansas City, Mo.; Louisville, Ky.; New York, N.Y.; Nordhoff, Cal.; Philadelphia, Pa.; Pittsburg, Pa.; Portland, Me.; Portland, Ore.; Pottstown, Pa.; Pullman, Wash.; Rochester, N.Y.; St. Louis, Mo.; St. Paul, Minn.; Springfield, Mass.; Syracuse, N.Y.; Washington, D.C.

The attendance of candidates for entrance examinations in Boston was greater this year than ever before in the history of the Institute. There were 625 applicants for examinations. There was an increase of 22 per cent. in the number of complete applicants, and an increase of 23 per cent. in the number of preliminary candidates. There was a decrease in the number of final candidates, which follows a decrease in the number of preliminary candidates of last year.

SUMMER SCHOOLS

Summer courses of the Institute were given this season in the following departments: —

In the Mathematical Department: in Analytic Geometry, Solid Geometry, and Integral Calculus. In view of the limited time given in Analytic Geometry, all those who had previously taken the course at the Institute were permitted to take the final examination of the course to obtain a record.

In Mechanical Drawing and Descriptive Geometry.

In Shop-work: courses in Wood-work, Forging, Chipping and Filing, and Machine-tool Work.

In English Composition.

In the Department of Modern Languages, elementary and advanced courses were given in both French and German.

In the Department of Chemistry, courses were given in General and Analytical Chemistry, Inorganic Chemistry for teachers, and Organic Analysis and Preparations; also in Organic Chemistry and Water and Air Analysis.

In the Department of Physics, courses in Mechanics, Light and Electricity, Heat, and Physical Laboratory work.

In the Department of Civil Engineering a course was given this year at Machias, Me., and a course in Surveying at the Institute.

In the Department of Mechanical Engineering, courses in Mechanism and Mechanical Engineering Drawing.

In the Department of Architecture a course was given in Bristol, R.I., where a study was made of colonial architecture; and, at the Institute, courses in Elementary Design and Stereotomy.

In the Department of Biology, courses were given in Bacteriology and its applications as applied to industrial subjects; also a course in Microscopy, pure and applied, was offered.

The Summer School in Metallurgy visited various cities to inspect metallurgical work. At New York and Hoboken they visited the Nichols Chemical Company; at Perth Amboy the Guggenheim Copper Refining Company; at Newark the New Jersey Zinc Company and the Crucible Steel Company; at

Trenton the Trenton Iron Works and Rolling Mill; and the Pen-coyd Company at Philadelphia; also the Midvale and Standard Steel Companies near Philadelphia. At Steelton they visited the Pennsylvania Steel Company. At Baltimore they visited the Baltimore Copper Company, and at Sparrow's Point the Maryland Steel Company.

BEAUX ARTS COMPETITION

The Architectural Department of Technology was well represented in the competition of the Beaux Arts Society of New York. Of the four first mentions, one was awarded to G. B. Ford, and another to W. C. Appleton, '01. J. L. Little, Jr., received a second mention; and F. R. Walker's design was marked *hors concours* on account of too great deviations from the preliminary sketch.

The prize, a gold medal, has not been awarded for several years. The reason for not doing so this year was that the drawings were too elaborate for the purpose of the design.

ARCHITECTURAL EXHIBITION

The annual exhibition of the Architectural Department took place June 4 to June 7, from 9 A.M. to 4 P.M. In addition to the work of the students, only a small portion of which is at the Pan-American Exposition, there were the designs of the department made for the recent competition of the Beaux Arts Society of New York, at which the Institute was distinguished by the award of the two first recompenses. The subject of the problem is "A United States Pavilion for a Pan-American Exposition." There was also shown Professor Despradelle's composition of last year, "The Beacon of Progress," which has not before been exhibited in this country. The design, consisting of twelve drawings, received the award of the first medal of the Salon of 1900. Two of the drawings were purchased by the French government for permanent exhibition at the Luxembourg, with permission of reproduction for America.

GENERAL NOTES

Dr. Pritchett had conferred upon him the degree of LL.D. by Harvard University at its Commencement on June 26. He has also received appointment as Chief of the Bureau of Awards of the Pan-American Exposition. A similar position at the Centennial Exposition was held by General Walker before his appointment to the Presidency of the Institute.

President Pritchett received, May 17, a cable message from Professor Alfred E. Burton, in charge of the eclipse party in Sumatra, announcing that important and highly satisfactory results had been obtained. The weather was cloudy during a portion of the eclipse, but not enough to interfere with the work of the party. As a result of their observations, all four contacts were observed, and a brilliant corona was shown at totality, which lasted nearly six minutes. Several photographs of the corona were also obtained.

In his cablegram Professor Burton reports, in addition to the above, success with the photographs of the "shadow bands," and that a slight change of the magnetometer was noticed during the period of totality. He also announced the completion of pendulum observations at the observing station.

In a letter from Harrison W. Smith, who is on the Eclipse Expedition from the Institute, speaking of the English coaling station at Perine, where the vessel stopped, he writes : —

If you can imagine a sandy desert sprinkled over with a thin layer of volcanic stones, you can get a pretty good idea of what the island looks like : it is as if a volcano were to get loose on the end of Cape Cod and sprinkle brown sugar over the sand-hills. On one end of the island, however, there are the sheds and buildings of an English coal company ; and, as the island has nothing on it but the coal company and a few hundred Arabs and Africans, it does not own a post-office, so that I was forced to leave my letter at the coal company's office, where the clerk very obligingly pasted a whole picture gallery over your letter and put it in his pocket, and assured me it would go by the next British mail steamer. There were enough letters from the other passengers, so that I don't think he can put the coat on without finding them ; but I can't see why he should ever put his coat on again. It is probably the hottest place inhabited by any white man. There is only one plant on the island, and they have two trained nurses to look after that tree and take its temperature every two hours. Rain never falls on this island, and every drop of water they use has to be con-

densed from sea water. In fact, sea water, air, and negroes are the only commodities that nature furnishes them with. It is pleasant to go to such a place and then get on a comfortable steamer and sail out into the beautiful Indian Ocean. Ever since we left Perine a gentle breeze has been blowing day and night. The north-east monsoon and light cumulus clouds have helped to protect us from the sun. The air is laden with moisture; but we wear cotton clothes and have cool baths in sea water, and are most languidly happy. The temperature of the air does not go much above 85 degrees in the day nor below 80 degrees at night, and the temperature of the sea water is about 80 to 81 degrees. We passed yesterday a ship going west. It shows interestingly how accurately these navigators can find their way about these oceans when two steamers, following the same track, pass each other not more than seven or eight miles distant. They have need of all their skill; for at the easterly end of the Red Sea there are no light-houses, notwithstanding the fact that the channel is crooked and dangerous, and followed by hundreds of vessels every year. . . . To-morrow we pass through the Maladive Islands (west of Ceylon), and there is there a large light-house; from there to Sumatra we must expect some rain; and, when we get to Sumatra, we shall probably have it by bucketfuls. The captain has meteorological charts issued by the Netherlands government which show the distribution of rainfall over the different parts of the East Indies. There is no place which shows so much rainfall as where we are going. Fortunately, however, most of it comes at night in the form of thunder showers; and, if we can keep our things dry, we shall probably have no trouble. I am very much pleased with the information we have received concerning the place we expect to select for our station. It is in the hills, away from the coast, where the climate is delightful and where we will get less rain than on the coast. We shall probably be able also to appropriate the top of some hill to plant our instruments on. . . . *Padang, April 7, 1901.*—We landed yesterday at 5 P.M., after a most delightful voyage. . . . We were most cordially received by almost all the Hollanders on board, but it was nothing to the consideration we have met with on land. As soon as the steamer was docked, Mr. Vedt, the United States consular agent, came on board, and greatly relieved us by the announcement that he had engaged rooms for us at the hotel.

We remained, however, at the ship, to see our baggage all off, and did not get to the hotel till about eight o'clock, after a half-hour's drive. Our rooms are fine. They are in a new building, and my room is now occupied for the first time. The sleeping-rooms are in a two-story structure, with a balcony running along outside, and the room leading off from the balcony and extending through to the other side of the building. A light partition divides the room into an open veranda and a bedroom, through which the air circulates freely all night; and we sleep on cool, hard beds, under enormous clouds of mosquito netting, with no blanket. It is a great advantage to be in a new building. It is hardly credible, but I have seen only one large cockroach in my room. And I am inclined to think it was not his fault that he was there; for he hopped out of my dress-suit case, and probably came up from the ship. On our way up from the ship last night the consul endeavored to lend interest to the conversation by telling us that, "at just about this point, a tiger was seen to cross the road last week." He made a mistake, however, in telling so imaginative a tale; for he was discovered by the governor to-day, who, in answer to a question, said that it was necessary to go at least one hundred miles inland to get any tiger. "In fact," said the governor, "the only wild animals here that are at all dangerous are the mosquitoes." We met last evening, after dinner, some of the members of

the other American parties. This morning we paid our official visit to the local governor. We would certainly have presented an interesting sight if we were to appear in Boston at ten o'clock in the morning in full evening dress; but this is the way we went to the governor, and were received by him at ten o'clock. The consul told us that it was not necessary to wear dress suits, that black clothes would do, but that dress suits were entirely proper, and the governor would probably consider it a compliment to him if we wore them. The Dutch astronomers arrived shortly after us, and were in evening dress. So we were very glad we adopted the suggestion of the consul.

And our reception was most cordial. We were received in a sort of large veranda at the front of his residence by the governor himself, and were soon seated round a little table, with a box of excellent cigars in the centre, and, before long, with glasses of a most peculiar and delicious lemonade. We received very many valuable suggestions from the governor, and shall decide to-morrow on the location of our station; but the greatest manifestation of hospitality on the part of the Dutch government which we have received was the announcement that all visiting astronomers would receive passes on the railroad to go where and when we pleased, and that all our baggage would be transported on the railroad free. . . . *April 11.*—After writing the above, I had my siesta, and then repaired to the residence of the consul, who entertained us at dinner at 9 P.M. (Dinner is never served before 8.30.) The consul's hospitality is complete, and leaves nothing to be desired. On the next day, Monday, the consul gave me a horseback ride on a little native Javanese pony, that gave me all I wanted to do to hold him in. It was a fine ride, but I haven't got over the effect of it yet. During the last two days we have been doing some shopping, and Professor Burton has been looking up the most desirable place for our station. We have decided on a place, and shall go there to-morrow. . . .

SOCIETY OF ARTS

Since February 14 the following lectures have been held before the Society of Arts:—

“A Forest Policy for the United States,” by Mr. Gifford Pinchot; “The Use of the Microscope in the Study of the Chemical Construction and Physical Properties of Metals,” by Dr. Henry Fay; “Electrical Wave Transmission,” by Professor M. I. Pupin; “The Increase of the Food Supply of Mankind through the Cultivation of Marine Animals, a Problem in Economic Zoölogy,” by Dr. George W. Field; “Principles of Action of Various Types of Refrigerating Machines,” by Professor J. E. Denton; “Cotton from Seed to Bale,” by Mr. Henry G. Kittredge.

THE UNDERGRADUATES

JUNIOR WEEK

The name "Junior Week," applied to the annual round of festivities occurring shortly after Easter, was first used in 1894. Since that time each Junior Class has striven to make the several events of that time more successful than those of the previous year.

The class of 1902 carried out this idea this spring by holding in the week of April 21 perhaps the most successful Junior Week in the history of the custom.

The initial event of the week was the Walker Club Play, "A Night Off," which was in every way a conspicuous success. The play, the fifth of the club's series, is by the late Augustin Daly. The production was staged at Copley Hall on Monday, April 22. Mr. J. T. Scully, Jr., '00, and Mr. E. H. Davis, '00, took the leading parts of "Marcus Brutus Snap," an actor in pursuit of fame and fortune under various legitimate aliases, and "Jack Mulberry," respectively. W. C. Appleton, '01, as "Justinian Babbitt," a professor of Ancient History with a weakness for writing plays, enacted the rôle creditably, as did F. Burns, '03, that of "Lord Mulberry." As to the female characters, E. P. Beckwith, as "Nisbe," did notably good work, while A. H. Hepburn, '03, and J. R. Morse, '01, as "Angelina Damask" and "Susan," the maid, respectively, were wholly satisfactory.

The whole cast consisted of: Messrs. W. C. Appleton, R. H. Rogers, E. H. Davis, F. Burns, J. T. Scully, Jr., I. G. Bouscaren, Jr., E. P. Beckwith, A. H. Hepburn, and J. R. Morse. The play was under the management of Messrs. Lowe, Gilson, and Upham.

The annual spring concert and dance of the Musical Clubs was held on Wednesday night, April 24, in Paul Revere Hall. A large and appreciative audience greeted the clubs in their last concert of the year, and all enjoyed a new and attractive programme. It follows in detail:—

PART FIRST.

1. Ho ! Jolly Jenkins *Sullivan*
GLEE CLUB.
2. "San Toy" March *Jones*
BANJO CLUB.
3. Solo *Selected*
MR. HOOKER.
4. Salome *Loraine*
MANDOLIN CLUB.
5. Sextet from a "Bygone Day" *Arranged by Hooker, '02*
MESSRS. HOOKER, WILSON, SEAVER, BATEMAN, and McDUGAL.
6. Operatic Potpourri *Arranged by Lansing*
BANJO CLUB.

PART SECOND.

7. The Magic Strings *Pomeroy*
MANDOLIN CLUB.
8. Quartet *Selected*
MESSRS. BOYD, FOSTER, BENSON, CUMMINS.
9. Mammy's Little Honey *Tracy*
GLEE CLUB.
10. Tutti Frutti *Boyd, '01*
BANJO CLUB.
11. A Little Bit of Fun *Arranged by Leon*
MANDOLIN CLUB.
12. Schneider's Band
MR. SEAVER and GLEE CLUB.

The appearance of *Technique, 1902*, was undoubtedly the most-looked-for event of the week; and the expectant student body had every reason to feel fully rewarded for the wait. The book undoubtedly surpasses all its predecessors in general arrangement and typography. For the first time the presentation of the reading matter is equal to that of the illustrations. For the first time the contents of the book are fittingly displayed, the same excellence characterizing the work of the printer, the artist, and the editor. The three-color reproductions of oil sketches by I. D. Hazelton for the frontispiece and Fraternity plates mark a step in advance, and the whole tone and character of the book is of the highest order. *Technique* is dedicated to President Pritchett. An excellent photo-

gravure and the leading article upon the life of the President are in harmony with the appreciative and dignified spirit of the body of the book.

The *Tech* Tea followed on Thursday, April 25, being held in the *Tech* office in the afternoon, in honor chiefly of those attending the promenade in the evening. Mrs. Henry S. Pritchett, Mrs. George F. Swain, and Mrs. Dana P. Bartlett formed the receiving party.

The Junior Promenade is probably the most popular event of the season after the appearance of *Technique*. The change from Pierce Hall to the Algonquin Club helped make the event the most successful ever given. Mrs. Pritchett, Mrs. Robert S. Peabody, Mrs. A. Lawrence Rotch, Mrs. Henry Whitman, and Mrs. Henry M. Whitney received the guests. Dancing began at half-past nine and continued until two o'clock, the supper being served at twelve. The committee elected by the class consisted of Redfield Proctor, Jr., L. S. Cates, H. Y. Currey, H. S. May, W. J. Mixter, and K. T. Stow.

The Prom. was a fitting ending to one of the most enjoyable Junior Weeks Technology has ever witnessed.

TECH SHOW.—“THE GRAND DUKE”

Technology added largely this year to her laurels in a theatrical way by successfully carrying out a most remarkable venture; namely, the production for the first time in America of the Gilbert and Sullivan opera, “The Grand Duke.”

A dress rehearsal and a final performance were given at the Hollis Street Theatre on the afternoons of April 30 and May 3. As in previous years, the proceeds go to the Athletic Association. The complete programme follows:—

"THE GRAND DUKE"

A COMIC OPERA IN TWO ACTS

Libretto by W. S. Gilbert

Music by Sir Arthur Sullivan

THE CAST

Rudolph, Grand Duke of the Duchy of Hesse-Halb-Pfennig,
 JAMES DRISCOLL, '02
 Ernest, Manager of the Dramatic Company of the Duchy of Hesse-Halb-Pfennig,
 MATTHEW CHAUNCEY BRUSH, '01
 Ludwig, Comedian of the Stock Company . . . HERMAN OTTO BLATT, '03
 Prince of Monte Carlo ALLAN WINTER ROWE, '01
 Notary of the Grand Duke of Hesse-Halb-Pfennig,
 THOMAS GRAY McDougall, '04
 Herald to the Prince of Monte Carlo . . . GERALD FRANCIS LOUGHLIN, '03
 Costumier to the Prince of Monte Carlo . . . EDWIN ROGERS CRANE, '04
 Viscount de Mentone JOSEPH ERNEST PHILBRICK, '01
 Julia, Leading Lady of the Theatrical Company,
 LEWIS EMERY, 3d (Alumnus, Tech '00)
 Baroness (affianced to the Grand Duke Rudolph), PAUL MCCLARY PAINE, '04
 Princess of Monte Carlo OMAR STEPHEN SWENSON, '04
 Elsa (Soubrette of the Theatrical Company) SELSKAR GUNN, '04
 Bertha ARCHIBALD GARDNER, '02
 Olga (of the Theatrical Company) ROBERT JOSHUA KING, '03
 Gretchen GILBERT HOWE GLEASON, '03
 Peasants, Theatrical Folk, Chamberlains, etc.

SCENES

ACT FIRST.—The scene is the public square at the Ducal Capital of the Duchy of Hesse-Halb-Pfennig.

ACT SECOND.—The scene is the Ducal Palace.

DANCES

There will be presented in the First Act the Peasant Sabot Dance, the Dance of the Chamberlains, Solo Dance, Julia.

There will be presented in the Second Act the Greek Dance, Duo Dance (the Prince and Princess of Monte Carlo), Solo Dance (the Prince of Monte Carlo).

To conclude with a Grand Ballet, danse des militaires.

SPECIAL DANCERS

Sabot Dance.—Dmitri Benjamin Bary, '04; William Horace Conant, '04; Alden Glover Drew, '04; Charles Henry Drew, '04; Harold Howard Gould,

'04; Maurice Goldenberg, '02; Elmer Merrill Hervey, '02; Lawrence Hargreave Lee, '03; Humphreys Milliken, '02; Horace Milliken Smith, '03; Henry Stanton Bogue Stimson, '02; William Whipple, '01.

Chamberlains' Dance.—George William Bateman, '03; Francis Blair Driscoll, '01; Arthur Gunderson Hayden, '01; Charles Emmett McCarthy, '02; John Frederick McGann, '01; Charles Galloupe Mixer, '02; William Jason Mixer, '02; James Loockerman Taylor, '02.

Nobles.—Arthur Parker Hall, '02; Frederic Arthur Olmsted, '03; Elmer Francis Ricker, '03; William James Sayward, '01; Charles Stillman Sperry, '04.

Banner Bearers.—Andrew Hopewell Hepburn, '03; Gustave Bouscaren, Jr., '04.

The Ballet.—Arthur Benjamin Allen, '03; Carlton Brigham Allen, '02; Lawrence Gardiner Coburn, '02; George Curtis Capelle, '03; Charles Ozro Egerton, '03; Henry Callender Field, '04; Duncan Rogers Franklin, '02; William Roger Greeley, '02; Everett Osgood Hiller, '04; Edmund Joseph Hurley, '04; George Morris Homans, '04; Ernest Foster Jenkins, '04; Hubert Merryweather, '04; Walter Philip Regestein, '03; Edmund Augustus Rice, '04; Edward James Ruxton, '03; Edward Farnum Rockwood, '04; Oliver Porter Scudder, '03; Richard Simon Shohl, '04; Henry Warren Stevens, '04; Albert Edwin Sweetser, '04; Richard Thomas Sullivan, '04; Herbert Samuel Walker, '02; Percy Alexander Staples, '04.

Chorus.—Girls: Norman Easton Borden, '02; Arthur Francis Bennett, '03; Matt Brodie, '02; Emmet Cockrill, '04; Fulton Crary, '04; Henry Hammett Fales, '03; Arthur Fuller Harkness, '02; Henry George Harris, '03; Charles Rogerson Haynes, '04; Louis Alfred Hermann, '04; Henri Lage, '04; John Reginold Marvin, '02; Ralph Herbert Nutter, '03; Eugene Haines Russell, Jr., '04; Walter Frederic Roper, '03.

Men: Freeman Nelson Bull, '04; Ernest Wilber Calkins, Jr., '04; Walter Henry Clough, '04; Merton Leslie Emerson, '04; Otis Dwight Fellows, Jr., '04; Leslie Roy Grant, '04; Arthur Parker Hall, '02; Abel Martin Hamblet, '02; Henry Kramer, '04; Howard Moore, '04; Howard Scott Morse, '03; Frederic Arthur Olmsted, '03; Elmer Francis Ricker, '03; William James Sayward, '01; Charles Stillman Sperry, '04; Lewis Arthur Wallon, '04.

SONGS

The following songs have been interpolated by request:—

1. "You remind me, Sweeting." Words by Richard Hovey. Music by Frederic Field Bullard.

Sung by MATTHEW CHAUNCEY BRUSH.

2. "Aus jenem Tag." Music by Marshner.

Sung by JAMES DRISCOLL.

"The Grand Duke" is produced and directed by Mrs. JANET EDMONDSON-WALKER.

Musical Director, Mr. JOHN MULLALY. *Master of the Ballet*, Mr. JOHN J. COLEMAN.

ALLAN WINTER ROWE, '01, *General Manager*.

JAMES BRADFORD LAWS, '01, *Stage Manager*. WILLIAM JASON MIXTER, '02, *Assistant Stage Manager*.

KENT TILLINGHAST STOW, '02, *Business Manager*. ROBERT WHITE, 2d, '01, *Press Manager*.

Patrons and Patronesses.—Mrs. Henry S. Pritchett, Mr. Charles Follen Adams, Mrs. Thomas Allen, Mrs. F. L. Ames, Mrs. Oliver Ames, Mr. and Mrs. W. F. Apthorp, Mrs. George H. Ball, Mrs. John Batchelder, Prof. Arlo Bates, Mrs. F. H. Briggs, Mr. and Mrs. Sam. Cabot, Prof. and Mrs. F. W. Chandler, Dr. and Mrs. D. W. Cheever, Mr. and Mrs. H. A. Clapp, Mrs. Alex. Cochrane, Mr. J. Templeman Coolidge, Jr., Mrs. G. G. Crocker, Mrs. B. W. Crowninshield, Mr. and Mrs. C. P. Curtis, Mrs. H. G. Curtis, Mrs. Alfred Dabney, Mrs. Hasket Derby, Prof. and Mrs. Desiré Despradelle, Mrs. E. Winchester Donald, Mrs. Wirt Dexter, Mrs. Amory Eliot, Mrs. J. W. Farlow, Mrs. Dudley B. Fay, Mrs. H. H. Fay, Mr. and Mrs. Arthur Foote, Mrs. Hollis French, Mrs. E. G. Gardiner, Mrs. W. A. Gaston, Mrs. Sam Gray, Mrs. G. G. Hammond, Mrs. A. E. Harding, Mrs. C. R. Hayden, Mrs. Charles Head, Mr. Alfred Hemenway, Mrs. F. L. Higginson, Mrs. W. H. Howard, Mrs. Julia Ward Howe, Mrs. Oscar Iasigi, Mrs. E. D. Jordan, Mr. and Mrs. W. B. Kehew, Mrs. David P. Kimball, Mrs. B. J. Lang, Prof. and Mrs. Gaetano Lanza, Mrs. J. M. Little, Mrs. Guy Lowell, Mrs. George H. Lyman, Mrs. C. S. Minot, Dr. and Mrs. S. J. Mixter, Mrs. G. H. Monks, Mrs. Everett Morss, Mrs. Louise Chandler Moulton, Mrs. J. C. Munro, Mrs. Guy Norman, Mrs. John C. Phillips, Mrs. A. S. Porter, Prof. and Mrs. Dwight Porter, Mrs. M. H. Richardson, Mrs. Andrew Robeson, Mrs. H. M. Rogers, Mrs. Alfred Roosevelt, Mrs. William Rotch, Mr. and Mrs. A. Lawrence Rotch, Prof. John D. Runkle, Miss Clara Endicott Sears, Mr. and Mrs. J. Montgomery Sears, Prof. and Mrs. W. T. Sedgwick, Mrs. Robert G. Shaw, Mr. F. J. Stimson, Mr. Howard Stockton, Mrs. G. H. Stoddard, Dr. and Mrs. John P. Sutherland, Prof. and Mrs. G. F. Swain, Prof. and Mrs. H. P. Talbot, Mrs. Eugene V. R. Thayer, Mrs. Augustus Thorndike, Mrs. William Tudor, Mr. and Mrs. F. P. Vinton, Mrs. Francis A. Walker, Mrs. C. Howard Walker, Mrs. E. S. Webster, Mrs. Barrett Wendell, Mrs. H. M. Whitney, Mrs. W. F. Whitney, Mrs. F. H. Williams, Mrs. Moses Williams.

L'AVENIR

"LES ROMANESQUES"

The play given by L'Avenir this year was Edmond Rostand's "Les Romanesques," a comedy in three acts. The performance took place on the evening of May 8, following a public dress rehearsal on May 6 in Copley Hall. The individual work was most creditable, and the whole affair was eminently successful. The full cast was as follows:—

PERSONAGES

Sylvette,	HALDEMAN FIGYELMESSY
Percinet,	RENAUD LAGE
Straforel, Spadassin,	HENRIQUE LAGE
Bergamin, père de Percinet,	ANTOINE LAGE
Pasquinot, père de Sylvette,	C. A. WHITTEMORE
Blaise, jardinier,	BERTRAM W. B. GREENE
Un Notaire,	J. H. BROWN

Spadassins.—S. K. Baker, W. M. Horstmann, J. G. Metcalfe.

Témoins.—J. H. Aguilar, F. R. Farnham, F. Z. Brown, A. E. Hansen.

Musiciens.—P. Finer, J. L. Lovett, M. C. M. Hatch, R. A. Pope.

Porteurs de Torches.—F. D. Chase, S. A. Fletcher, W. H. Rowe, H. H.

Fales, G. M. Magee, L. H. Smith.

Invités.—W. P. Harris, W. C. Rott, J. S. Joseph, B. W. Mendenhall.

Nègres.—R. T. Sullivan, R. C. Tolman.

DIRECTION

Directeur-Général, M. CHARLES H. L. N. BERNARD.

Régisseur, PAUL GERHARD L. HILKEN, 1901.

Sous-Régisseur, WILLIAM GORDON HOLFORD, 1901.

Dames Patronnesses.—Mme. Alfred L. Aiken, Mme. Bryce Allan, Mme. Frederick L. Ames, Mme. Francis I. Amory, Mme. William F. Aphthorp, Mme. Joseph S. Bigelow, Mme. Arthur T. Cabot, Mme. George E. Cabot, Mme. Samuel Cabot, Mme. Richard Cary, Mme. William A. Cochrane, Mme. Ernest A. Codman, Mme. Julian Codman, Mme. Russell S. Codman, Mme. Algernon Coolidge, Jr., Mme. James M. Crafts, Mme. Stephen V. R. Crosby, Mme. Charles P. Curtis, Jr., Mme. Robert Cushing, Mme. J. De Forest Danielson, Mme. Desiré Despradelle, Mme. Albert Dibblee, Mme.

E. Winchester Donald, Mme. William Endicott, Jr., Mme. John C. Fairchild, Mme. Henry H. Fay, Mme. Joseph S. H. Fay, Jr., Mme. James T. Fields, Mme. William H. Forbes, Mme. John L. Gardner, Mme. Thomas J. Gargan, Mme. Curtis Guild, Jr., Mme. Gardner G. Hammond, Jr., Mme. Karl F. Heinzen, Mme. Francis L. Higginson, Mlle. Sarah Orne Jewett, Mme. Thacher Loring, Mme. Thornton K. Lothrop, Mme. Charles Lowell, Mme. Elizabeth G. Lowell, Mme. George H. Lyman, Mme. Moses Macdonald, Mme. Frank G. Macomber, Mme. Henry Parkman, Mme. John C. Phillips, Mme. Charles A. Porter, Mme. Henry S. Pritchett, Mme. James J. Putnam, Mme. Edward B. Robins, Mme. Edward Robinson, Mme. A. Lawrence Rotch, Mme. Herbert M. Sears, Mme. J. Montgomery Sears, Mme. Philip S. Sears, Mme. Malcolm Storer, Mme. James J. Storrow, Mme. Charles H. Taylor, Jr., Mme. Bayard Thayer, Mme. Charles S. Tuckerman, Mme. Nathaniel Walker, Mme. Fiske Warren, Mme. Susan H. Watson, Mme. Barrett Wendell, Mme. Henry Wheeler, Mme. Frederick S. Whitwell, Mme. Moses Williams.

ATHLETICS

The New England Inter-collegiate Athletic Association held its Annual Champion Games on Saturday, May 18, at Worcester. Williams won with a total score of $32\frac{1}{6}$ points, Amherst securing second place with 32 points to her credit. Dartmouth scored a total of $19\frac{1}{6}$ points, Bowdoin $18\frac{1}{6}$ points, Brown $16\frac{1}{6}$, and M. I. T. $8\frac{1}{3}$ points. The bicycle race was postponed on account of the poor condition of the track, and was run off Tuesday, May 21. This event was won by Wesleyan.

Following is the schedule of games for the football season of 1901: Wednesday, October 9, Holy Cross at Boston; Saturday, October 12, Amherst at Amherst; Saturday, October 19, Wesleyan at Middletown; Saturday, October 26, Tufts at Boston; Saturday, November 2, N. H. State at Durham; Wednesday, November 6, Brown at Providence; Saturday, November 9, open at Boston.

The annual spring championship games were held May 4 at Riverside. Two new Technology records were made, both of them in the weight events. H. P. McDonald raised the record

for the shot put to 40 feet $\frac{1}{2}$ inch, and H. T. Winchester put the new discus mark at 105 feet 6 inches.

100-YARD DASH.—First heat won by H. T. Winchester, '03; second, W. B. Boggs, '04. Time, 10 4-5 sec. Second heat won by G. H. Gleason, '03; second, J. W. Crowell, '04. Time, 11 2-5 sec. Final heat won by W. B. Boggs, '04; second, G. H. Gleason, '03; third, H. T. Winchester, '03. Time, 10 4-5 sec.

220-YARD DASH.—Won by W. B. Boggs, '04; second, F. D. Avery, '02; third, G. H. Gleason, '03. Time, 24 3-5 sec.

440-YARD DASH.—Won by W. P. R. Pember, '02; second, W. H. Williston, '02; third, J. M. Grice, '03. Time, 57 4-5 sec.

880-YARD RUN.—Won by G. B. Manson, '03; second, C. F. Holcombe, '04; third, W. H. Williston, '02. Time, 2 m. 17 2-5 sec.

1-MILE RUN.—Won by S. F. Worcester, '04; second, O. S. Stockman, '01; third, J. F. Peaslee, '03. Time, 5 m. 6 sec.

2-MILE RUN.—Won by S. F. Worcester, '04; second, J. F. Peaslee, '03; third, O. S. Stock-

man, '01. Time, 10 m. 53 1-5 sec.

120-YARD HIGH HURDLES. First heat won by K. C. Grant, '02; second place forfeited. Time, 18 2-5 sec. Second heat won by R. A. Pope, '02; second, R. L. Kruse, '03. Time, 18 sec. Final heat won by R. A. Pope, '02; second, R. L. Kruse, '03; third, K. C. Grant, '02. Time, 17 4-5 sec.

220-YARD LOW HURDLES.—Won by R. A. Pope, '02; second, K. C. Grant, '02; third, R. L. Kruse, '03. Time, 30 1-5 sec.

BROAD JUMP.—Won by R. A. Pope, '02, 20 ft. 7 in.; second, W. P. R. Pember, '02, 20 ft. 1-2 in.; third, F. K. Baxter, '01, 19 ft. 11 in.

HIGH JUMP.—Won by G. A. Curtis, '04, 5 ft. 7 1-2 in.; second, F. K. Baxter, '01, 5 ft. 6 1-2 in.; third, R. A. Pope, '02, 5 ft. 5 1-2 in.

POLE VAULT.—Won by G. A. Curtis, '04, 9 ft. 11 in.; second, tie between F. K. Baxter, '01, and R. A. Pope, '02, 9 ft. 3 in.

THROWING 16-POUND HAMMER.—Won by G. D. Wilson, '03, 96 ft.; second, H. T. Win-

chester, '03, 67 ft. 11 1-2 in.;
third, H. P. McDonald, '01,
64 ft. 3 1-2 in.

PUTTING 16-POUND SHOT.—

Won by H. P. McDonald, '01,
40 ft. 1-4 in.; second, H. T.
Winchester, '03, 34 feet 8 3-4
in.; third, G. D. Wilson, '03,
30 ft. 8 1-2 in.

THROWING THE DISCUS.—

Won by H. T. Winchester, '03,
105 ft. 6 in.; second, E. P.
Fleming, '01, 100 ft. 8 in.;
third, L. A. Crowell, '01, 92 ft.
11 in.

2-MILE BICYCLE RACE.—

Won by J. H. Carr, '01; sec-
ond, M. H. Schwartz, '04;
third, Matt Brodie, '02. Time,
5 m. 20 sec.

The championship for the
Meet was won by the Junior
Class by a lead of only two
points over the Sophomores and
Freshmen, who were tied for
second place. This is shown
by the following list of points
won by classes in the different
events:—

	'01	'02	'03	'04
100-Yard Dash . . .			4	5
220-Yard Dash . . .		3	1	5
440-Yard Dash . . .		8	1	
880-Yard Run . . .		1	5	3
1-Mile Run . . .	3		1	5
2-Mile Run . . .	1		3	5
120-Yard High Hurdles		6	3	
220-Yard Low Hurdles		8	1	
Broad Jump . . .	1	8		
High Jump . . .	3	1		5
Pole Vault . . .	2	2		5
Shot Put . . .	5		4	
Hammer Throw . .	1		8	
Discus . . .	4		5	
2-Mile Bicycle Race .	5	1		3
Totals . . .	25	38	36	36

The championship for the
year, toward which will count
points won in the Winter Meet
and the Annual Cross Country
Run, as well as those won yes-
terday, resulted in a Freshman
victory, as shown by the follow-
ing:—

	'01	'02	'03	'04
Winter Meet . . .	28	14	15	15
Cross Country Run .			3	6
Spring Meet . . .	25	38	36	36
Totals . . .	53	52	54	57

TENNIS ASSOCIATION

The M. I. T. Tennis Association has elected the following
officers for the ensuing year: president, E. H. Cutter; vice-presi-
dent, J. R. Jones; secretary and treasurer, P. D. A. Hawkins;
Executive Committee, J. T. Cheney, D. M. Belcher, G. B. Wood;
representative to N. E. I. T. A., D. M. Belcher.

THE ATHLETIC ASSOCIATION

The Athletic Association held its annual election May 29. Richard S. Frost, '02, was chosen president; George T. Seabury, '02, vice-president; Robert A. Pope, '02, and George D. Wilson, '03, treasurer and secretary, respectively. President Frost is captain of the track team. George H. Gleason, '03, was elected manager of next year's track team, and Charles A. Sawyer, Jr., '02, representative of the Athletic Association to the Advisory Council.

CLUBS AND SOCIETIES

Walker Club.—The annual Walker Club dinner was held Saturday, May 25, at the Technology Club.

Musical Clubs.—The Musical Clubs enjoyed an outing June 3, which was somewhat out of the ordinary,—a water carnival on the Charles River, in the neighborhood of Riverside.

Electrical Engineering Society.—At the meeting of the Electrical Engineering Society, May 17, W. A. Durgin was elected president; A. W. Friend, vice-president; and B. W. Capen, secretary and treasurer.

Civil Engineering Society.—The annual meeting of the society was held May 7. The result of the election of officers for 1901-2 was as follows: president, Farley Gannett, '02; vice-president, H. H. Fletcher, '02; secretary, H. S. Baker, '03; treasurer, S. K. Baker, '03. Programme Committee: Paul Hansen, '02; F. J. Field, '02; H. B. Pond, '02; E. L. Brainard, '02. Executive Committee: A. E. Place, '02; L. C. Hammond, '02; V. Q. Nettleton, '03.

The secretary, in his report, stated that the present active membership was 87; honorary members, 15. The treasurer's report showed the society to be in a flourishing condition financially.

Twelve meetings have been held during the year 1900-1, one excursion, and the annual dinner. Average attendance at lectures, 33; least, 15; greatest, 55.

Naval Architectural Society.—May 8 the members of the Naval

Architectural Society met at the United States Hotel. Professor Peabody, Mr. Leland, and Mr. Newell were the guests of the society; and nearly all its members were present.

Architectural Society.—The Architectural Society held its annual dinner at the Thorndike on the evening of Saturday, May 11. About fifty members of the society were present. The honorary members were Professor D. Despradelle and Mr. S. W. Mead, the guest of the evening being Dr. Pritchett.

Co-operative Society.—At a meeting of the Co-operative Society May 2, A. E. Lombard, '02, was elected president; L. S. Cates, '02, vice-president; Walter Humphreys, treasurer; L. H. Lee, '03, secretary.

The Schenectady Trip.—For the past few years it has been customary, during the spring vacation, for Professor Puffer to conduct an excursion of the fourth year Electricals to the works of the General Electric Company, of Schenectady. This year the party was composed of Professors Puffer and Laws, Instructors Seavey, Smith, and Daniels, and Messrs. Bickford, Blauvelt, Bolster, Cody, Sturtevant, Woods, and Hammond.

Technique.—The edition this year was seventeen hundred copies,—four hundred over that of last year. The Board of Editors of *Technique*, 1903, as elected by the Technique Electoral Committee, is as follows: editor-in-chief, Howard S. Morse; associate editors, George D. Wilson, George W. Swett; society editor, George N. Wood; athletic editor, H. T. Winchester; statisticians, Hewitt Crosby, Lawrence H. Lee; art editors, R. F. Jackson, chief, L. R. Kaufmann, A. H. Hepburn; business manager, John T. Cheney; assistant business manager, W. W. Burnham.

Miss Ava M. Stoddard, '03, has been awarded the prize for the best essay on "Equal Suffrage," given by the College Equal Suffrage League. The prize of \$100 was offered early in last December. The competition was open to all women students of Massachusetts colleges. Competitors were to choose their own subjects for their essays, the only condition being that the essay should favor equal suffrage.

The judges were Mrs. Edwin D. Mead, Dr. Edward Cummings,

and the editor of the Boston *Transcript*. Miss Stoddard was born in Washburn, Me. She attended the Dillaway Grammar School and the Girls' High School, graduating from there in 1899.

The essay, "Is the Extension of the Suffrage to Woman an Expedient Political Measure?" will be published very soon.

DR. PRITCHETT'S DINNER

"On Saturday evening, May 25, Dr. Pritchett entertained fifty men at dinner at the Technology Club.

"In speaking of the purpose of the dinner, President Pritchett expressed his regret at the necessity of limiting the number of guests, saying that his wish had been to have *all* the students gathered around the board to talk over the events of the past year and plans for the future. The lack of a suitable place made this impossible, so that he had selected the officers of the classes, the Institute Committee, the *Tech* and *Technique* Boards, and men from the athletic side of Technology life to serve as representatives of all departments of the Institute student body.

"The President spoke of the custom of holding formal dinners, in vogue among the classes and societies, saying that the men spend a great deal of money to have a very poor time. The most enjoyable dinner of which we were then partaking cost about fifty-five cents a cover. Dr. Pritchett promised that in the new Gymnasium — that cynosure of all our hopes for a better life — we should have a place where we could enjoy such dinners and be at home. He described the customs and told of the good fellowship existing in the German students' *vereins*, weekly or bi-weekly gatherings for the discussion of scientific problems and their practical applications. The professors frequently join the students at these meetings and speak to them, discussing their problems with them, and at the same time dwelling upon the connection of these problems with the broader and artistic side of the student's life, — the side of *culture*." — *The Tech*.

TUSKEGEE SCHOOL

Early in the spring Mr. Booker Washington, at the request of President Pritchett, made a short address concerning the work at Tuskegee. The student body was so thoroughly interested by Mr. Washington's simple recital of what was going on at Tuskegee that it subscribed enough money to send an additional student there for one year. The following letter, which has just been received from this student, is perhaps the most effective exhibit that could be made of the good which such gifts accomplish. The letter is reprinted exactly as written: —

TUSKEGEE, ALA., June 24, 1901.

Kind Friends,—I write you this letter to thank you for your kindness in aiding me to get an education at this school.

No doubt you would like to know something about me. This is my first term in Tuskegee, and I like it fine.

My trade is carpentry, and I like it more and more each day. My home is in Charleston, S. C., and I am going home to spend the summer if nothing happens.

My father and mother attended one of Mr. Washington's lectures, and that gave them the thought of sending me here.

I am in the A Preparatory Class. My studies are reading, drawing, grammar, geography, and arithmetic. I like my studies very much. I would like to finish in my trade and also in my studies.

I return much thanks.

Yours gratefully,

JULIAN BOONE.

CADET BATTALION

The cadet battalion held its public exhibition drill May 8 at the armory on Irvington Street. The exhibition consisted of company drill, followed by battalion drill and escort of the colors. A feature of the exhibition was the work of a wall-scaling squad, who showed great dexterity in climbing the temporary walls. The exercises closed with dress parade, in which the four companies, headed by the M. I. T. Military Band, passed in review before Major G. W. Briggs.

THE GRADUATES

WASHINGTON SOCIETY OF THE MASSACHUSETTS INSTITUTE OF
TECHNOLOGY

The Washington Society of the Massachusetts Institute of Technology held a reception to President Pritchett March 30, 1901, at the Cairo Hotel, Washington, D.C. About seventy-five persons were present, including President Pritchett, Commissioner Macfarland, Hon. Carroll D. Wright, and Professor Simon Newcomb. The members present were nearly all accompanied by ladies, and everything was planned to make the event, what it proved to be, an attractive and unusual social function. The early part of the evening was spent in informal introductions and the mutual exchange of reminiscences among the old graduates. A stringed instrument band rendered popular selections meanwhile from time to time, and also later while a collation was being served to the guests seated around a dozen or fifteen tables about the large dining hall. The latter part of the evening was taken up by the speeches of the distinguished guests.

Another meeting was held May 30 at the Octagon Building. This time ladies were not invited; and the members spent a happy evening in conversation, with musical intermissions, cigars, beer, and refreshments. The society will shortly make a trip *en masse* to Newport News to see launched the largest ship ever built in this country.

The Washington Society is designed to promote the mutual welfare of the members and that of the Institute. It is hoped that all graduates coming to Washington will at once identify themselves with it.

THE LAWRENCE TECH SOCIETY

The graduates, non-graduates, and undergraduates of Lawrence, Mass., and vicinity held a dinner on April 26, with the idea of forming a Technology Society of Lawrence. President Pritchett,

Dr. H. W. Tyler, and Dr. Bancroft, of Phillips-Andover, were the guests of the evening. Of the fifty men, former Tech students in and about Lawrence, thirty-one were present at this dinner. A committee was appointed to take action toward forming a society. The idea is to have an informal meeting once a month during the winter, a smoke talk, or German supper, with something of interest in the engineering line.

Representatives of nearly every important industry in the city were present at the banquet, among the number being R. A. Hale, John Alden, F. H. Silsbee, F. H. Schwarz, W. D. Livermore, G. F. Russell, J. M. Greenwood, H. E. Osgood, F. M. Andrews, F. B. Galaher, A. H. Pitcher, C. C. Goldsmith, W. H. Hildreth, A. E. Kimberly, J. W. Smith, S. D. Gage, I. L. Sjöström, J. E. Simpson, I. Beach, G. P. Carmichael, A. G. Chilson, G. A. Moran, C. Morrison, J. A. Fremmer, F. Johnson, J. E. Walworth, H. A. Brown, and J. A. Collins, Jr.

THE CONNECTICUT VALLEY ASSOCIATION

President Pritchett was the guest of honor at the annual banquet of the Connecticut Valley Technology Association in the Massasoit House, Springfield, April 20. About thirty-five members were present.

THE TECHNOLOGY CLUB

Since the last notice in regard to the Technology Club, which appeared in the April number, there have been four club evenings. For the twelfth evening of the season a trio concert was given by Miss Helen Tufts, Mrs. Eaton, and Mr. Hadley, assisted by Miss Bessie Tufts. There were trios for the violin, 'cello, and piano, and songs. The good music was keenly appreciated by the audience. On April 16 the M. I. T. Banjo, Mandolin, and Glee Clubs gave a concert to members and ladies. The clubs were in excellent form, the result of a winter's hard practice being well shown. The topical songs led by Mr. Seaver proved very amusing. Another Ladies' Night was given on May 7, when Profes-

sor Courtney Langdon, of Brown University, gave a talk on "L'Aiglon." His interpretation of the play was most cultured, and his rendering of the lines very dramatic. One of the most interesting talks was that given on the fifteenth evening, the last one of the season, by Frederick Hoppin Howland, '93, war correspondent for the London *Daily Mail* and the Providence *Journal*. His subject was "Some Experiences with the South African Field Force." These were told most vividly, and gave the members and their friends new and distinct views of the war in South Africa.

The most successful season at the club is closed, and a complete list of the talks for the season is appended.

Progress is being made in the alterations of the new house at 83 Newbury Street, and the club hopes to occupy it by the first of August.

At a recent meeting of the council it was voted to limit the membership of the club to five hundred resident members, there being at present a membership, including resident and non-resident, of six hundred and three.

In addition to numerous dinners and other meetings of various special Technology organizations, the following meetings and "Talks," open to the entire membership of the club, have been held during the season of 1900-1901:—

1900

- Oct. 8. Annual meeting.
- Oct. 30. "Open House," in connection with the political torchlight parade.
- Nov. 6. Stereopticon announcements of returns from the national election.
- Nov. 20. Dr. Poultney Bigelow, "The White Man in the Tropics."
- Dec. 4. Mr. Ernest Temple Hargrove, "With Briton and Boer in South Africa."
- Dec. 11. Reception to the Glee, Banjo, and Mandolin Clubs and their friends after their annual concert at Huntington Hall.
- Dec. 18. Mr. G. H. Wright, "Rambles in North Africa." (Illustrated.)

1901

- Jan. 8. Hasket Derby, M.D., "A Visit to a Dead City in the Baltic." (Illustrated.)
- Jan. 18. Mr. George W. Cable, reading: "Possen Jone'." (Ladies' Night.)

- Jan. 29. Professor Francis W. Chandler, "An Architect's Visit to the Paris Exposition." (Illustrated.)
- Feb. 5. Professor Adolph Cohn, "Modern French Politics."
- Feb. 19. Mr. Leland Powers, in the play of "David Garrick." (Ladies' Night.)
- Feb. 26. Captain Dion Williams, U.S.M.C., "Personal Impressions of the Battle of Manila Bay, and Subsequent Events in the Philippines, as experienced by him while on the 'Baltimore' and 'Oregon.'"
- March 12. President Arthur T. Hadley, "Reminiscences of the late President Walker."
- March 19. Major John Twiggs Myers, U.S.M.C., "With the American Marines in Pekin."
- March 26. Trio concert, by Miss Helen Tufts, Mrs. Eaton, and Mr. Hadley, assisted by Miss Bessie Tufts. Trios for violin, 'cello, and piano; songs. (Ladies' Night.)
- April 16. Concert, M. I. T. Glee, Banjo, and Mandolin Clubs. (Ladies' Night.)
- May 7. Professor Courtney Langdon, "L'Aiglon." (Ladies' Night.)
- May 18. Mr. Frederick Hoppin Howland, "Some Experiences with the South African Field Force."

NEWS FROM THE CLASSES

1868.

PROF. ROBERT H. RICHARDS, *Sec.*

Mass. Inst. of Technology, Boston.

The class raised \$2,725 for the Walker Memorial Gymnasium Fund. This figure, while it places the class far from the head of the list of total sums raised, causes it to lead all others, as it should do, in the rate per capita.—Whitney Conant, who suffered for years from indigestion, has lately overcome that by finding the right diet; and he is now, we are glad to say, enjoying the best of health. He has gone abroad for four months for a good vacation.—Professor R. H. Richards, with his associate, Professor H. O. Hofman, has taken his summer school to visit Long Island, New Jersey, Pennsylvania, and Maryland, to see the iron and steel works, and also those of copper, lead, gold, silver, and zinc. The students are having the usual pleasant and instructive time; and, since the numbers are small, the amount of personal attention each receives is much increased.

1874.

CHARLES F. READ, *Sec.*

Old State House, Boston.

The regular quarterly lunch of the Association of the Class took place at Marliave's Restaurant, Boston, on Wednesday, April 17. Fourteen members were present, and President Pritchett was the honored guest of the Association. After lunch Dr. Pritchett addressed the gentlemen present upon timely topics, and urged liberal subscriptions to the Walker Gymnasium Fund. As a result of his efforts several subscriptions were added to those already made by members of the Association.—The distinguished marine painter, William F. Halsall, is to pass the summer in Europe.—Colonel Samuel P. Colt has been recently elected president of the United States Rubber Company.

1875.

E. A. W. HAMMATT, *Sec.*

53 State Street, Boston.

Francis T. Sargent was in town recently, and reports that

F. T. King's address is 26 Broadway, New York City; also, that Benjamin A. Oxnard is located in New Orleans, La. He says that Ben was married about a year ago.—William H. Shockley is at present in London, Eng., his address being Bewick, Moreing & Co., Broad Street House, New Broad Street, London.

1876.

JOHN R. FREEMAN, *Sec.*

4 Market Square, Providence, R.I.

Theodore H. Schwarz is manager of the Iron-Silver Mining Company of Leadville, Col. Many important improvements have been made, and satisfactory results have been accomplished under the efficient management of Mr. Schwarz.

1877.

RICHARD A. HALE, *Sec.*

Lawrence, Mass.

At the annual meeting of the American Society of Civil Engineers, held in January, Professor George F. Swain was elected one of the directors of the society.

1878.

LINWOOD O. TOWNE, *Sec.*

Haverhill, Mass.

Julian A. Kebler, vice-president of the Colorado Fuel and Iron Company, is now in the East on business connected with very extensive improvements at the steel works in Pueblo, Col. These works will be greatly enlarged, and a large centre established for rails, plate, structural shapes, wire, and nails. The development of this company under Mr. Kebler's management has been very marked, and it is interesting to note that many engineers in the employ of this company are Institute men.

1880.

PROF. GEORGE H. BARTON, *Sec.*

Mass. Inst. of Technology, Boston.

George H. Barton read a paper before the Boston Scientific Society, 241 Tremont Street, April 23, on "Hawaii, Past and Present: Was the Revolution of 1893 Justifiable?" He lived in the Hawaiian Islands, being engaged on a government survey, and was acquainted with most of the chief actors in the events that led up to the de-

thronement of Liliuokalani and the setting up of the Dole provisional government. The same address was given at Cambridge, Sunday afternoon, April 14.

1882.

WALTER B. SNOW, *Sec.*

Watertown, Mass.

F. M. Gooding is now permanently located in Waltham, Mass., and is interested in the Waltham Trap Rock Company. — The present business address of Walter H. Hersey, treasurer of Roubaix Worsted Mills, is 43 Sabine Street, Providence, R.I. Walter B. Snow is engaged upon the design of a complete manufacturing plant for the B. F. Sturtevant Company at Hyde Park, Mass.

1883.

HARVEY S. CHASE, *Sec.*

8 Congress Street, Boston.

John G. Eppendorff is with William H. Prentiss, 669 Main Street, Buffalo, and was seen by the secretary on a recent trip to Buffalo. The latter was escorted to the Exposition, and entertained at the Saturn Club in a very cheerful manner by the genial John. The interior

decorations and general color scheme of the Hotel Iroquois at Buffalo are from Eppendorff's designs, as well as many other artistic and notable pieces of work in that city. — Gale is proposing to go abroad this season, sailing early in July, visiting the south of England, France, and Switzerland. — Fred O. Harri-man, civil engineer at Jaltipan, Mexico, has a considerable project on hand in the development of the Jaltipan region, including navigation on the river and tram-roads connecting the river with the Tehuantepec Railway. He also proposes to develop various tracts of land along the route for fruit-growing and various industries, brick-yards, *et cetera*, needed locally. It is possible that he may come East this summer in furtherance of these projects. — Franklin B. Richards, with M. A. Hanna Company, Cleveland, Ohio, has been recently heard from, and stated that all lake steamers formerly controlled by the Hannas have been turned over to the United States Steel Corporation. — The annual report of the city auditor of Newton for 1900, just issued, possesses additional interest from being the first to be tabulated according to

the suggestions of the National Municipal League. One of the objects of the league is to secure the adoption by municipalities of a uniform method of accounting. City Auditor Otis of Newton presents the city's accounting in the customary form in the body of the work, to which is added an appendix, compiled by Harvey S. Chase, which follows the league's "Uniform System." Chase attended the meetings of the National Municipal League at Rochester, May 10, at which the schedules of the report were adopted by the League. There has recently been published at the Municipal Printing Office "A Report upon the Books and Accounts of the Collector's Department of the City of Boston, with Especial Reference to the Results of the Acts in Regard to Special Assessments for Laying Out and Construction of Highways during the Past Ten Years," by Harvey S. Chase.

1884.

DR. AUGUSTUS H. GILL, *Sec.*
Mass. Inst. of Technology, Boston.

The secretary saw Asa W. Whitney at the Institute a short

time since. He claims the degree of "iron doctor" from long experience in helping foundry-men out of their difficulties with their iron mixtures. He is located at present with the Boston Testing Laboratories. He has three boys, all headed for M. I. T.—Newell writes that the work of investigation of the water resources of the United States is steadily increasing, and that it is proposed to sell some of the public lands to build reservoirs and hydraulic works in the arid West.—Prescott is again at the Milton Academy, teaching science.—Tyler and the secretary have both received letters from Ilsley, who, after years of travel in search of health, has returned to his old address in Milwaukee.—Bunce is superintendent of the Bachelor Mining Company at Ouray, where it has mines and mills of prominence.—'84's contribution to the Walker Memorial Fund is \$3,000.—C. S. Robinson, general superintendent of the Colorado Fuel and Iron Company, has been intimately associated with the extensive improvements at the steel works at Pueblo, Col.

1885.

PROF. E. B. HOMER, *Sec.*

1 Somerset Street, Boston.

At the annual class dinner, held on May 11 at the Puritan Club, Boston, Arthur K. Hunt, of Portland, Me., was elected president for the coming year. Ames, Brown, Homer, Hunt, Jackson, F. M. Kimball, J. L. Kimball, J. M. Kimball, Litchfield, Little, Morss, Plaisted, Pratt, Rawson, Richards, Robertson, Steele, and Talbot were able to attend, and in consequence, Boston, Chicago, New York, Portland, Me., and Scranton, Pa., were fully represented. Little reviewed class history in a charming manner, Morss outlined the work of the Financial Committee of the Walker Memorial, and "Ike" boomed the West in general and the Northwestern alumni in particular, in flowing periods that showed no diminution of the hustling spirit that we knew so well in student days. Above all, we were fortunate in having President Pritchett with us, and in hearing of Institute needs, progress, and intended expansion, as suggested by his examination of the school during the past year.—

The following addresses are changed from those last issued: A. W. Allen, 267 Locelle Avenue, Philadelphia, Pa.—James H. Bates is with Edison Electric Light Company, 53 Duane Street, New York, N. Y.—Charles W. Eaton for the next fifteen months will be at Gulfport, Miss.—Thomas W. Fry, 1170 West Lake Street, Chicago, Ill.—Hugh McRae, of the firm of Hugh McRae & Co., bankers, Wilmington, N. C.—Edgar H. Mumford, 18th and Hamilton Streets, Philadelphia, Pa.—Robert E. Richardson, manager of Kansas City Electric Light Company.

1886.

PROF. ARTHUR G. ROBBINS, *Sec.*

Mass. Inst. of Technology, Boston.

John Galen Howard, who designed the electrical tower at the Buffalo Exposition, has been appointed superintendent of the University of California buildings by the competing architects.

1887.

EDWARD G. THOMAS, *Sec.*

4 State Street, Boston.

Walter C. Brace has lately returned from extended studies

of copper properties in Arizona. He is now giving his attention to economic development of mining properties.

1888.

WILLIAM G. SNOW, *Sec.*

245 No. Broad Street, Philadelphia, Pa.

B. R. T. Collins was in Philadelphia in May to take command of the United States steamship "Dorothea," which has been loaned by the Navy Department to the State of Illinois for the Naval Reserve. About fifty men from this organization, with the aid of regular pilots, took the ship to Chicago *via* the St. Lawrence River and the Lakes.—J. C. Runkle has been abroad for several months.—Stephen Childs has removed from West Newton, Mass., to Gordon Farms, Castleton Corners, Staten Island, N.Y.—G. C. Claffin is in Asheville, N.C., in charge of the installation of an electric light and street railway plant with a long distance transmission line.—W. H. Blood, Jr., is at North Falmouth, Mass., recovering from a severe attack of typhoid fever.—Russell H. Colby has been elected president of the

Aurora Metal Company, Aurora, Ill.—James W. Loveland is superintendent of Boston Works, Levey Brothers, soap manufacturers.—John M. Sully is in Joplin, Mo.—William G. Snow has removed to 245 No. Broad Street, Philadelphia, Pa.

1889.

WALTER H. KILHAM, *Sec.*

9 Park Street, Boston.

A dinner and reunion of '89 was held at the Technology Club on March 15. There were present Hobbs, Thurber, F. L. Pierce, Spalding, A. L. Davis, C. E. Beals, W. L. Smith, Bridges, Ashton, W. W. Lewis, Laws, H. French, Fiske, Howard, Marsh, and Kilham. After the dinner a letter was read from President Pritchett's secretary, regretting the president's necessary absence. Messages of regret from a number of men were also read. By vote of the class the secretary was authorized to levy an assessment of \$3 per man, in order to print a class book. Mr. Hobbs, to the regret of all present, then tendered his resignation as president of the class, and W. B. Thurber was elected in his place.

W. H. Kilham was elected secretary. Mr. Thurber, on taking the chair, emphasized the need of more subscriptions from the class for the Walker Memorial; and the class voted to issue an appeal to its members and to commence a campaign of personal solicitation. It was voted to have a reunion every year.—E. L. Brown is senior member of the firm of Brown & McLain, dealers in electrical and street railway merchandise at 41 Federal Street, Boston.—Charles E. Beals is pastor of the Second Congregational Church at Greenfield, Mass., with residence at 31 High Street, that town. He is also chaplain of the Second Regiment, M. V. M.—A return postal card was received May 12 from J. N. Bulkley, regretting inability to attend the class dinner. His address is care of United Engineering Company, Ltd., Post-office Box 1082, Johannesburg, South Africa.—G. A. Whitman is expert in power transmission with W. H. Bailey Company, 12 Pearl Street, Boston.—Harrison Loring, Jr., is a member of the firm of Robert S. Brine & Co., teamsters and riggers, at 43 India Street, Bos-

ton.—*Town Talk*, of Washington, D.C., for March 16, has the following to say about E. V. Shepard. The article is accompanied by a half-tone portrait which shows Shepard to be looking very fit. "After the Commissioner and Assistant Commissioner, the most responsible executive position in the Patent Office is that of Chief Clerk, of which the present incumbent is Mr. Edward V. Shepard. Mr. Shepard was appointed to his position by Mr. Duell soon after that gentleman became Commissioner of Patents. Born in Massachusetts, he received a thoroughly sound general education, supplemented by a technological training in the Massachusetts Institute of Technology, of which he is a graduate. Subsequent to his graduation he spent several years in field work as civil engineer and contractor, being engaged in important work in connection with various railways, irrigation, and other work throughout the West and in Mexico. Much of his professional life has, however, been spent in New York in the active pursuit of his profession as an engineer; and he was engaged as consult-

ing engineer by various prominent railway and Wall Street men. As Chief Clerk, Mr. Shepard is responsible for the receipt and disbursement of all moneys, the ordering of supplies, and the distribution thereof. He must not only know each one of the six hundred and ninety-seven employees by sight and name, but also their adaptability and personality, so that each may be set at the task to which he or she is best suited. He maintains general supervision of the conduct and work of the employees. He must be able at a moment's notice to give information concerning anything connected with the office, its history, and its enormous business transactions. As a slight indication of the mass of business which claims his attention, it may be noted that his individual official correspondence involves the weekly receipt and consideration of from four to five thousand letters; and yet this is but one item of the great volume of business which devolves upon him and his clerical force."—George U. G. Holman is general manager of the Canadian Electric Light Company, of Quebec, P. Q.

1890.

GEORGE L. GILMORE, *Sec.*

Lexington, Mass.

Frank W. Atwood, New England representative for the Heller & Merz Company, anilines and ultramarines, has removed his office to 20 Central Wharf, Boston.—Charles E. Martin, who for the past ten years has been with James Martin & Sons, calico printers of Philadelphia, is now with O. S. Janney & Co. of Boston, importers of dyestuffs and chemicals.—Edward B. Raymond, with the General Electric Company of Schenectady, has recently been in Boston, where he had an opportunity to indulge in his favorite game of golf on one of our suburban courses.—Joseph B. Baker, consulting electrical engineer, has a temporary office and laboratory at 40 Lincoln Street, Boston.—The engagement is just announced of J. O. DeWolf and Miss Frothingham of Boston.—William H. Collins, with the Silver Spring Bleach & Dye Works of Providence, R.I., has recently been made assistant superintendent.

1891.

CHARLES GARRISON, *Sec.*

Lexington, Mass.

The decennial dinner of the class was held at the Technology Club, Saturday, May 4, at six o'clock. Twenty-nine members responded to the call, who enjoyed an exceedingly interesting evening. The dinner and music being disposed of, President Fiske offered a greeting, and read from the '91 *Technique*, recalling earlier days and characterizing his classmates as well as "Minto" was wont to do. The secretary-treasurer then read short reports, giving the condition of the decennial report, together with a few statistics. He also showed the treasury balance to be somewhat less than the government reserve. Then followed letters from classmates unable to attend. Billy Dart's merriment was greatly missed, and Birdie's familiar face was elsewhere, depicting side-splitting characters for the Sunday *Herald*; Jimmie Swan could not get away from New Jersey and favor us with essays on Naval Architecture;

Horace Ensworth expected to come up from Hartford, but was unable to leave at the last moment; Ernest Nickerson, the inventor of the class cheer, was booked to come, but did not appear, as was also the case with George Hooper and John Rooney. Ex-Presidents Blanchard and Cunningham addressed the class, and were followed by H. C. Forbes and W. B. Trowbridge, who made heart-rending appeals for the Walker Memorial, with the result that the total then stood at about \$70,000 and now at \$90,000. The average salaries have grown well in the past year. \$3,200 against \$2,457. Highest, \$7,500 as against \$6,000. Lowest, \$1,500 as against \$1,200. The following representatives of the class were present: Alley, Blanchard, Bowen, Bryant, Bryden, G. A. Campbell, J. Campbell, Cunningham, Damon, Dana, Douglass, Fiske, Forbes, Garrison, Goodwin, Holmes, Kimball, Mansfield, March, Palmer, A. R. Pierce, J. W. Pierce, C. B. Pratt, N. R. Pratt, Trowbridge, Vaillant, Wason, Wilder, Young.

1892.

PROF. SEVERANCE BURRAGE, *Sec.*

Purdue University, Lafayette, Ind.

Frank C. Shepherd has received the appointment of deputy superintendent of the street-cleaning division of the street department from Superintendent Bertrand T. Wheeler. Since graduation he has worked on the Boston Board of Survey, three years with the Metropolitan Sewerage Commission, three years on the Boston subway, having full charge in the field of three sections, as assistant engineer in the Boston street department in charge of street watering assessments, and since the abolition of the system as assistant in the engineering office of the paving division.

In a statement given out by Superintendent Wheeler relative to the appointment, he says:—

“Mr. Shepherd has shown his ability as an active, competent, and hustling engineer, and is appointed in the hope that he will continue by his active business management the improvements already inaugurated during the past year in the street-cleaning division of the street department.”

1893.

FREDERIC H. FAY, *Sec.*

60 City Hall, Boston.

The eighth annual class meeting and dinner was held at the Technology Club on Saturday evening, April 6, 1901. The business meeting was held at 6.30 o'clock, President Crosby presiding. The entire board of officers was re-elected for the ensuing year, as follows: president, William Wyman Crosby; first vice-president, Grosvenor Tarbell Blood; second vice-president, Herbert Nathan Dawes; secretary-treasurer, Frederic Harold Fay; assistant secretary, Charles Milton Spofford. The secretaries announced the death, during the year, of four members,—Frank William Adams, Dennis Edward Callahan, John Gould Anthony, and John Clifford Brown. Upon motion of F. N. Dillon it was voted that a committee of three be appointed to prepare, upon the death of each member, a suitable memorial to be published in the *TECHNOLOGY REVIEW*. C. M. Spofford, F. N. Dillon, and A. L. Kendall were appointed upon this committee. A proposition, suggested by

F. N. Dillon, but not acted upon, was that upon the occasion of either the ninth or the tenth annual dinner we observe a '93 day by arranging for the class to visit the Institute in a body in the afternoon, by keeping open throughout the day a class headquarters where members could meet socially, and by having the usual meeting and dinner in the evening. It was thought that in this way the sociability of the annual gathering would be greatly increased, and that such an arrangement would be particularly attractive to those members coming from a distance. Dinner was served at 7.15 o'clock in the large common room of the club. During the meal the guest of honor, President Pritchett, arrived. Following the repast there was read an interesting letter from Rigby Wason, of London, descriptive of his experiences in the South African War, in which he served as a member of the famous City of London Imperial Volunteers. His letter is given elsewhere. Professor E. H. Barker, of the Lowell Textile School, formerly leader of the M. I. T. Glee Club, sang very acceptably.

The event of the evening was the informal address of President Pritchett. He described the changes, recent and proposed, at the Institute, told of his visits to the alumni in other cities, spoke of the progress of the Walker Memorial subscription, and congratulated the class upon its fine showing in the memorial canvass and upon the strength of the class organization. In closing, Dr. Pritchett said he wished to keep closely in touch with the alumni, that the Institute and he might profit by their ideas and suggestions. The door of his office is always open, and he cordially invited the members to call upon him whenever the opportunity came. The President's remarks were received with heartiest enthusiasm. Upon motion of Mr. Spofford, Dr. Pritchett, by a rising vote, was unanimously elected an honorary member of the class. A report of the work of the class in the Walker Memorial canvass was presented by C. M. Spofford. The attendance was two guests, President Pritchett and Professor Barker, and the following members: Bemis, Blake, Carney, Crosby, Dawes, F. N. Dillon, Fay,

W. S. Forbes, Hawley, H. A. Houghton, D. D. Jackson, A. L. Kendall, Latey, Latham, H. A. Morss, W. B. Page, E. S. Page, Pickert, Spofford, Tomfohrde, Tucker, R. N. Wallis.—The following letter from Rigby Wason (8 Sussex Gardens, Hyde Park, London), written January 24, 1901, was read at the annual class dinner: "*My dear Fay*,—Many thanks for your letter of the 14th inst., just at hand. I was glad to get such a good account of the class of '93. As regards my own doings in the past year, which you are good enough to ask me an account of, they are soon told. I enlisted in the regular army on January 1, 1900, in the City of London Imperial Volunteers, more commonly known as the C. I. V's. I had been a volunteer for some years past, and as such only liable to be called out for the defence of the home country; but, when the nation found itself short of men, I wasn't going to say 'No' to the call, and was willing to go anywhere and do anything to keep the old flag flying. I was in the cyclist section; and we were chiefly used as despatch riders, and I don't

boast when I say we did the work right well. Only two of us were captured, and it was very seldom that we failed to get our message through. We astonished every one with the capabilities of the bicycle for this sort of work, and were able to lick horseflesh all hollow, as we could take food enough with us to last us two or three days, and were then entirely independent. The ease, too, with which a bicycle can be hid saved us many a time. I returned to England October 29, and was at once laid low with gastritis and other internal complications which kept me in bed for a month. But I went through the entire campaign with my regiment without being a single day off duty,—a thing few can boast of and which speaks volumes for my constitution. The death of our beloved Queen has thrown the whole nation into mourning. Every one is in black, blinds down, and every sign of grief. It means a great upset of everything, and trade is sure to be badly disorganized. I am now, if wanted, ready to fight for my King (Edward VII.) and country. Remember me, please, most

kindly to any who may recollect me, and believe me faithfully yours, Rigby Wason." — James S. Wadsworth, formerly of Course VI. and captain of a class company in military drill in our Freshman year, was one of the victims of a most deplorable accident at Portland, Me., on April 24 last. For several years Wadsworth has been in the employ of the New England Telephone and Telegraph Company. On the afternoon named, he and several others were in an office in the Portland telephone building, when suddenly, without provocation or the slightest warning, one of the number, Brainerd by name, drew a revolver and began firing at the rest of the party. Being an expert marksman, Brainerd instantly killed one, fatally wounded another, and so seriously wounded Wadsworth and a fourth man that for weeks their life was despaired of. But Wadsworth's strong constitution saved him. After a time he began to gain strength, and on May 31 he was able to leave the hospital. His many friends will be delighted to hear that it is only a matter of a short time when his recovery will be

complete. James S. Wadsworth is a son of Dr. Peleg Wadsworth, of 17 Florence Street, Malden, Mass. For a considerable time he was a special inspector of the New England Telephone and Telegraph Company. When C. W. Taintor, '93, resigned the position of manager of the Manchester, N.H., Telephone Exchange, Wadsworth was sent there to succeed him. Later he held a similar position at Lewiston, Me. At the time of the accident he had gone to Portland in connection with the installation of a new exchange system there.—The following account of the wedding of John Sturgis Codman on April 25, 1901, is taken from a Boston paper: "Before a splendid assembly of representative society folk, which quite filled Trinity Church, Miss Susan Sargent Codman, daughter of Mr. Richard Codman, of 8 Fairfield Street, was married at noon to-day to Mr. John Sturgis Codman, two members of one of the oldest and most prominent families in this city thus being united. The bride, attired in a beautiful gown of

heavy white satin, ending in an unusually long train, was escorted to the chancel rail by her father, where were awaiting them the bridegroom and the best man, Mr. Julian Codman. The bride was attended by Miss Margaret Codman, gowned becomingly in pink. The ceremony was performed by Rev. E. Winchester Donald, D.D., the bridal party standing in the midst of masses of white and green, which quite filled the chancel, the rail of which was almost hidden by bay-trees, interspersed with festoons of laurel and Easter lilies. Banked on either side were tall palms, thickly fringed with pots of white spirea, the floral decoration being as effective as anything seen in Trinity in a long time. Following the ceremony there was a small wedding breakfast served at the home of the bride's parents." Some months ago Mr. Codman, assisted by Mr. T. Adamowski and Mr. T. Wallace Goodrich, gave a song recital in Association Hall, Boston.—The class is represented upon the Faculty of the Institute by Charles L. Norton, who was recently appointed assistant professor of

heat measurements in the Physics Department. Mr. Norton graduated from Course VI. in the Institute in 1893, at which time he was appointed an assistant. In 1895 he was made instructor in heat measurement, to which subject he has especially devoted his attention, and the course in which he has developed to a high degree of efficiency. He has made an extended series of tests of materials used for steam-pipe covering, and has also investigated very fully the diffusive effect upon light of ribbed and striated window glass of different kinds, these investigations having been made at the instance of the Factory Mutual Insurance companies of New England. He has also published several scientific papers relating to heat measurement.—Jules Godchaux, since leaving the Institute, has been engaged in sugar-raising, being associated with Leon Godchaux, one of the leading sugar producers in Louisiana. He has located at Raceland, La., a station on the Southern Pacific Railway about fifty miles west of New Orleans. Godchaux is a member of several New Orleans clubs, takes considerable interest in politics, and was a

delegate to the National Republican Convention in 1900.—Stephen L. Breed is an attorney-at-law, his office being in the Tremont Building, 73 Tremont Street, Boston. His residence is still at Lynn, Mass.—The address of Howard Van Doren Shaw, architect, is 405 Monroe Street, Room 115, Chicago, Ill.—Samuel F. Rosenheim is engaged in the manufacture of mirror plates and leaded glass, his business address being N. W. corner 15th and Poplar Streets, St. Louis, Mo.—Percy G. Parsons is practising law at 31 State Street, Boston.—Densmore & LeClear, engineers, have removed from 7 Exchange Place to 15 Exchange Street, Boston. The senior member of this firm is E. D. Densmore.—Herbert A. Houghton is with the Draper Company, Hopedale, Mass., his address being 13 Church Street, Milford, Mass.—Harry N. Latey is with the Rapid Transit Subway Construction Company, Park Row Building, New York City, in charge of electrical work in connection with the new New York subway. Previously he was connected with the Electrical Construction Depart-

ment of the Manhattan Railway Company of New York.—At the final Technology Club smoke talk of the season, on May 18, Frederick Hoppin Howland, war correspondent of the London *Daily Mail* and Providence *Journal*, spoke upon "Some Experiences with the South African Field Force."

1894.

S. C. PRESCOTT, *Sec.*

Mass. Inst. of Technology, Boston.

F. B. Abbott is teaching manual training in Emporia, Kan.—A. F. Hunt, Jr., is senior member of the new law firm of Hunt, Ingle & Small, with offices at 96 Broadway, New York City.—H. B. du Pont has passed the winter at Phoenix, Ariz., and reports that his health is improving.—A letter was received by the secretary not long since from A. M. Robeson, who gave an interesting account of his professional career during the past eight years. He left Boston in 1893, and for the next four years was mechanical engineer and electrician for the De Beers Consolidated Mines, Ltd., Kimberly, South Africa. The following year he became assistant

general manager of the same company. In 1898 he returned to America, and spent a year studying mining engineering at Columbia. He then went to Douglas Island, Alaska, as superintendent of two gold mining companies, and in August, 1900, again went to South Africa as consulting mechanical engineer for Messrs. Eckstein & Co., Johannesburg. Robeson wrote from London, where he had gone to await the cessation of hostilities in South Africa. For several years before coming to the Institute in 1890, Robeson had been engaged in engineering work in South America, so his professional experience has been of a most interesting character, and has given him a close acquaintance with affairs in several of the lands of industrial opportunity.—A. G. Robb is superintendent of the Robb Engineering Company, Ltd., Amherst, N.S.—F. F. Low is chief draughtsman of the Architectural Division of the Boston Elevated Railway Company.—The Lord Electric Company, of which F. W. Lord and T. P. Curtis are the members, is one of the busiest engineering firms in Boston, and now employs over one

hundred men. In addition to their professional work both men find time to keep up their interest in athletic matters, and their names are almost sure to be seen in the lists of leading golfers in tournaments around Boston.—H. E. Hewitt is located in Peoria, Ill., where he is engaged in architecture. His address is 22 Arcade Building.—G. B. Haven has recently completed the plans for a large machine-shop. A number of interesting problems, quite out of the ordinary, had to be solved, making the work one requiring exceptional skill.—Leslie Dana is assistant superintendent of the Charter Oak Stove and Range Company's Stove Foundry in St. Louis.—H. R. Batcheller has opened a laboratory for metallurgical work in South Boston.—Roland Bailey is assistant to chief engineer of the Steel Cable Engineering Company, 96 Conductor Street, East Boston.

1895.

E. H. HUXLEY, *Sec.*

185 Lake Street, Chicago, Ill.

"Charles L. Parmelee has been appointed chief engineer of the New York Continental

Jewell Filtration Company, and will remove his offices from 35 Wall Street, New York, to the new factory just completed for the company at Hudson and Sussex Streets, Jersey City." (*Engineering Record*, vol. 43, p. 357, April 13, 1901.)

1896.

FRANK E. GUPTILL, *Sec.*

1006 E. Main Street, Richmond, Va.

The ninth annual dinner of the class was held at Hotel Brunswick, March 23. Twenty-three members were present. President Pritchett, as guest of the class, spoke of Technology in general and of the Walker Memorial Fund, calling attention to the work done by the Chicago alumni, and urging '96 to take hold and work. Edward S. Mansfield was toastmaster, and following is the toast list: "Technology," President Pritchett; "Our City Governments," Eugene C. Hultman; "Songs," Walter M. Stearns; "Five Years Ago," J. Arnold Rockwell; "The Twentieth Century," John G. Callan.—Charles Gilman Hyde was married to Miss Isola, of Waban, Mass., on May 21.—Dr. J.

Arnold Rockwell has severed his connection with the Boothby Surgical Hospital, and has opened an office of his own at 685 Boylston Street, "The Kensington."—As a result of a circular sent out to members of the class the 1st of April, the subscriptions to the Walker Memorial Fund have greatly increased.

1897.

JOHN A. COLLINS, JR., *Sec.*

55 Jackson Street, Lawrence, Mass.

Augustus C. Lamb was married on April 30 to Miss Effie Brooks Armstrong, of Allston. Mr. and Mrs. Lamb will reside in Huntington, Mass.—William H. Allen, Jr., was married on June 6 to Miss Helen Eliza Miller, of Chicago.—The secretary wishes to thank those who responded so promptly to his appeal of May 31 in behalf of the Walker Memorial. At the time of the issuing of the letter the class had some \$1,600 to its credit. This amount has now been raised to \$3,000; and the honor of the class has been saved, temporarily at least. Although the full \$100,000 called for has been raised, yet a much

larger sum will be required; and the class should not feel itself released from its obligation until the original assessment of \$5,000 has been obtained.—Thomas F. J. Maguire has been appointed civil and electrical engineer for public buildings for the United States government in the Treasury Department at Washington. Since his graduation he has been engaged in the engineer's office of Boston, under Mr. Jackson.

1898.

C.-E. A. WINSLOW, *Sec.*

Hotel Oxford, Boston, Mass.

Robert S. Allyn is with Mitchell, Bartlett & Brownell at 41 Park Row, New York.—C. A. Bennink is draughting with Percy and Polk, architects, of San Francisco, Cal.—Chester F. Drake has recently gone to Philadelphia, where he has become connected with the Department of Public Works in the employ of the city.—C. A. Torry has closed his office in Philadelphia, and has been in Boston during the spring.—J. D. Underwood is designing machinery for G. T. McLauthlin & Co. at

120 Fulton Street, Boston.—G. W. Blood is with Hornblower & Weeks of 10 Wall Street, New York, as broker's clerk.—G. B. Pillsbury is now Lieutenant Pillsbury of the Engineer Corps.—C.-E. A. Winslow has a paper in the June number of the *Technology Quarterly* on "The Prevalence of Typhoid Fever in Newport, R.I., in 1900, and its Relation to Defective Sanitation," which is an expansion of a report made to the city government of Newport last fall.—A. T. Davis is practising as a heating and plumbing expert in Portland, Me.—W. R. Strickland, finding the hard-money sentiment too strong in Ohio, has gone to Denver, Col., where his address is 720 Kittredge Building.—G. M. Godley has moved to Philadelphia to take a position with the Midvale Steel Company.—N. Watkins and S. K. Humphrey are among the recently elected associate members of the Alumni Association.—Lester D. Gardner has spent the better part of May and June in a trip through the Adirondacks and among the summer resorts of Lake George for his paper.—Van Rensselaer Lan-

sing and Walter G. Zimmermann are both members of the Executive Committee of the North-western Alumni Association.—A. B. Whitmore is in the coal business in Dayton, Ohio.—C. S. Hürter has returned from New Mexico, and is now at 71 Water Street, Hyde Park.—D. Mayer has left New York and gone to Chicago, where he is in the employ of the A. G. Spalding Land Company.—A. H. Cox is studying at the Beaux-Arts. His address is 3 Rue Sufflot, Paris, France.—Miss S. Usher is a teacher in the School of Housekeeping on St. Botolph Street, Boston.—R. F. Bennett is with the Metropolitan Water Board, and is engaged on the construction of the great Wachusetts dam at Clinton, Mass.—A. T. Drew, who has been for some years in the South, with the Farbenfabriken of Elberfeld Company, in the manufacture of aniline and alizarine dyes, has returned to Boston, where he has an office at 32 India Street.—G. Smith is with the William R. Trigg Company of Richmond, Va., as an aid to the superintendent.—B. S. Hinckley is now with the Northern Pacific Railroad, and

located at St. Paul, Minn. He had a narrow escape while surveying in the valley of the Yellowstone River a year ago, when a sudden rain-storm had driven him to take refuge under a culvert, and a dam broke above, letting the stream rise so quickly as nearly to drown him.—Lewis A. Hayden is superintendent of the Work mine at Cripple Creek, Col.—Howard L. Coburn and Irvin H. Kaufman have both left Boston to take positions in New York. Coburn wrote as follows in describing the “smoker” held to welcome President Pritchett to New York on May 8th: “’98 was, as usual, fully represented; and the only class-yell heard was ’98, ’98, Rah, Rah, Rah, Rah! The class was represented by Allyn, D. Q. Brown, Coburn, Colcord, Conklin, Edgerley, Kaufman, Kutroff, Morrill, Nelson, Streng, Wadsworth, C. W. Wilder, and D. L. Wing. ’99 and 1900 were both well represented, Pierce and Bean, ’99, coming over from Philadelphia; but I did not see a single ’97 man whom I knew. By the application of a little ‘Applied’ Course II. politics, a sufficient interest was discovered to warrant the ar-

ranging for our informal dinner for the 23d of May. At first this was intended for a '98 affair; but, following the trend of the times, we expanded, to include '99 and 1900, and finally to invite all Tech men to join us. None of the '98 men show much change as a result of the strenuous life of Giddy Gotham. In fact, except for the 'lovely bunches of spinach' sported by Wilder and Colcord, one would hardly realize that we were 'three-year-olds.' Kaufman is assistant superintendent of the Cameron Steam Pump Works, 'Bob' Allyn is practising patent law, Nelson is teaching the young idea over in Brooklyn, Edgerley is talking paint, 'Dick' Brown has 'struck it,' Morrill is in the telephone business over in Brooklyn, Streng in electrical work in Newark, Colcord with a smelting works at Perth Amboy. Your humble servant is with Tower & Wallace, paper mill engineers."

1899.

WALTER O. ADAMS, *Sec.*

1776 Mass. Ave., No. Cambridge,
Mass.

A novelty in the form of an

Italian announcement card has lately been received by the secretary, telling of the marriage of Morton C. Mott-Smith to Signora Elvira Savelli at Florence, Italy, on April 29, 1901.—Unless some member of the class can show a prior claim, the honor of being father to the Class Boy falls to Willard T. Cannon, of Salt Lake City, Utah. He writes that "the little fellow was born on March 12, 1901, at 11.50 P.M."—The secretary has but lately learned of the sad death by drowning in the Connecticut River last summer of W. A. Perkins.—Burt R. Rickards has lately devised an "Apparatus and Method for Rapidly Staining Large Numbers of Sputum Specimens," a full description of which may be found in the *Journal of the Boston Society of Medical Science*, vol. v., of March, 1901. Rickards is now assistant bacteriologist in the Boston Board of Health Laboratory.—R. S. Henderson is instrument man on the Peoria Extension of the Chicago & North-western Railway, with headquarters at Walnut, Ill.—At a recent meeting of the New England Association of Chem-

istry Teachers in Boston a paper was read by W. O. Adams on the "Manufacture of Soap and the Recovery of its By-products."

1901.

"W. L. Danforth, II., will be with the plan department of the Factory Mutual Fire Insurance Company, Boston.—W. Whipple, II., will be with the Cin Clare Central Sugar Refining Company, Cin Clare, La.—W. J. Newlin, II., has accepted a position as draughtsman, B. F. Sturtevant Works, Jamaica Plain.—P. H. Parrock, II., expects to return to the Institute next year to take extra work in chemistry and mining.—F. D. Rash, III., will be assistant engineer with the St. Bernard Coal Company, Earlington, Ky.—F. K. Baxter, III., will be assistant superintendent of the Wilkes Mining Company, Grantville, Ga.—W. W. Garret and J. W. Boyle, III., will return to the Institute next fall

as assistants to Professor Lodge.—F. W. Freeman, III., will be at the Institute as Professor Norton's assistant.—L. B. Wilder, III., has accepted the position of chemist with the Uinta Summit Copper Company, Uinta County, Utah.—C. I. Auer, III., has accepted the position of assayer at a gold mill, Tallapoosa, Ga.—E. F. Lawrence, IV., will return to the Institute next fall to take the post-graduate course in architecture.—C. H. Shivers, IV., will be with G. H. Ingraham, architect, Boston.—W. C. Appleton and Ford, IV., will be with Peabody & Stearns, architects, Boston.—W. I. Bickford, VI., will return to the Institute next fall as assistant in physics.—J. C. Woodsome, VI., will be with the New York Telephone Company, New York City.—C. F. F. Campbell, IX., will continue his studies in Germany or accept a position as instructor in one of the English universities."—*The Tech.*

NECROLOGY

CHARLES NELSON WRIGHTINGTON

Charles Nelson Wrightington, one of the most beloved and highly respected members of the class of '94, was drowned in the Chicopee River at Ludlow, Mass., on the 6th of May.

He was the second son of Mr. and Mrs. Charles W. Wrightington, of Brookline, Mass., where he was born on the 28th of May, 1871. His boyhood and youth were spent in Brookline. He attended the public schools of the town, graduating from the high school in 1890. On entering the Institute in the fall of that year, his knowledge of military tactics and his evident qualities of leadership won for him the position of captain of Company D of the Freshman Battalion. He was a member of Phi Beta Epsilon Fraternity. He chose for his profession that of a mechanical engineer, and was graduated from that course in 1894 with an excellent record. Throughout his course at the Institute he was very popular, and commanded the respect of fellow-students and instructors alike.

In 1892, and again after graduation, he went abroad for the summer months, travelling in England and on the Continent.

On his return from Europe in the fall of 1894, he worked for a short time as mechanical engineer for Curtis, Davis & Co. at Cambridge, and soon after accepted a position as mechanical engineer for the Ludlow Manufacturing Company at Ludlow. Here he spent the rest of his professional life, devoting his energies to the prompt and careful performance of his duties, and in six years made for himself a record of splendid achievement. The position remained for a time a purely mechanical engineering one, but soon broadened into one with a great variety of engineering problems,—mechanical, civil, and constructive,—all of which were solved with judgment and marked ability.

While engaged so actively and with great enjoyment in purely engineering work, Wrightington found his tastes turning more and

more to the broader lines of general management and administration, and seriously considered leaving Ludlow, as there seemed to be no opening of that character for him there. Almost at the time when he felt it his duty to seek a position elsewhere, increased business led to further developments at Ludlow; he was asked to take charge of the planning and construction of a new mill,—a model of its kind,—and on its completion he became superintendent. He was also asked to investigate the matter of suitable gymnasia and bath-houses for the employees of the company; and this he did in his usual thorough way, visiting, observing, and comparing the leading establishments of New England.

It was not for long, however, that he was to hold the position so honorably won.

With one of his business colleagues, like him an expert canoeist, he was attempting to shoot the rapids of the Chicopee, when the canoe was overturned and both men were thrown into the stream. They seized the canoe for support; but it was unable to bear the weight of both, so Wrightington started to swim for the shore. He had approached within ten feet of the river bank when his comrade shouted for help. Thinking not of his own safety, he turned back to aid his companion, but it was too late; and in the cold waters his own strength probably gave way, and he, too, went down. Eye-witnesses claim that he literally "laid down his life for his friend."

It was not Nelson Wrightington's ability, marked as it was, that gave him a high place in the esteem of those who knew him: it was, rather, the manliness, the straightforward, generous, courageous spirit, the noble character, that we all admired. In his life he was lofty in his ideals, true to the best principles of right living, kind and thoughtful in his treatment of all, strong in his faith in God and his fellow-men. In his death he was a hero.

Many are they who have felt the influence of his life. Rich are they who could claim this man as their friend.

S. C. P.

REVIEWS

TEXT-BOOK OF INORGANIC CHEMISTRY

BY VICTOR VON RICHTER. Edited by Professor H. Klinger, University of Königsberg. Authorized Translation by Edgar F. Smith, Professor of Chemistry in the University of Pennsylvania. Fifth American from the Tenth German Edition. Philadelphia: P. Blackiston's Son & Co., 1900. pp. 430. Price \$1.75.

The unusual activity in the field of inorganic chemistry during the last few years has led to many interesting and important discoveries, which are not yet described in the text-books. The editor of the tenth German edition of Richter's "Inorganic Chemistry," of which this new edition in English is a translation, has introduced into the book a brief account of these new additions to the science. The result is that the translation is thoroughly up to date, and contains many important facts that can be found in no other one book. The revision appears to have been done carefully. To indicate the thoroughness with which the work has been accomplished, a few facts taken at random are cited. The following-named substances are described adequately: nitramide, nitro-copper, hyponitrous acid, hydrazine, hydrazoic acid and its salts, the persulphates, and the percarbonates. A good description is given of the work on argon, helium, and neon; and the properties of the more important carbides and silicides are described. The atomic weight of nickel which is given is that recently established by Richards and Cushman. And the work of Stokes on the amido-phosphoric acids is mentioned.

The general method of arrangement and treatment of the facts is that used in earlier editions, but more stress is laid on theoretical considerations than heretofore. The theory of electrolytic dissociation is used throughout the book, and special attention is paid to the thermo-chemistry of the important reactions.

The book is too well known to warrant extended criticism. While it is not suitable for an elementary course in chemistry, it is a guide of considerable value for advanced study, and is a reference

book in which the important facts of the science are given in a compact form.

J. F. N.

LABORATORY INSTRUCTIONS IN GENERAL CHEMISTRY

BY ERNEST A. CONGDON, Ph. B., F.C.S., Professor of Chemistry, Drexel Institute, Philadelphia. Philadelphia: P. Blackiston's Son & Co. pp. 110.

In examining a new laboratory guide in descriptive chemistry, one immediately searches for something novel in the treatment of the subject, as so many books covering this ground have been published within the last few years. The author's reason for adding a new book to the long list of laboratory manuals is, as stated in the preface, because "much of the material is original, having been developed in the course of ten years' experience in laboratory teaching, while those portions taken from other sources have been modified and added to, so that they might better meet the wants of students." Particular attention is called to the appendix, which contains directions for quantitative experiments illustrating the theories and laws of chemistry.

From an examination of the book it seems to the reviewer that a great many of the new experiments will add to the confusion of the student rather than increase his knowledge or improve his powers of observation. A few cases are briefly cited. Under chemical change fourteen experiments are given. In addition to the usual experiments to illustrate this phenomenon, the student is directed to treat a mixture of sugar and potassium chlorate with concentrated sulphuric acid. In another experiment, weighed quantities of potassium nitrate, potassium carbonate, and sulphur are to be ignited. In still another the effect of sunlight is to be noted upon a mixture of bromine vapor and benzene, and upon the precipitates formed by the action of potassium hydroxide and potassium ferrocyanide on ferrous sulphate. In experiment 22, which is introduced to illustrate the fact that heat is the result of chemical change, the student is directed to note the change in temperature when a strong solution of sodium hydroxide is treated with concentrated hydrochloric

ric acid, and to *explain* what has taken place and to tell *why* heat was produced. Answers to these questions are to be given by the beginner after but one or two exercises in the laboratory.

The writing of chemical equations is insisted upon from the very first. The student is asked to write the equations representing the reactions which take place between sulphur and carbon, and between ammonia and hydrochloric acid, and to state how the action of the electric current upon water is an example of analysis, before he has studied hydrogen and oxygen.

The book contains directions for 262 experiments and an appendix in which a number of quantitative experiments are described.

The printing and binding are well done, but the use of paper of two distinct shades detracts from the appearance of the book.

J. F. N.

FURNACE HEATING

By WILLIAM G. SNOW (M. I. T. '88). New York: David Williams Company, 1900. pp. 170. Figures 94. Tables 31.

While much has appeared in the trade papers about Furnace Heating, there is no more comprehensive book on this subject than this one by Mr. Snow. It is plainly written, and can be used intelligently by the contractor and by the designer. It is not intended primarily for the use of students.

The subjects treated are furnaces, house-heating, the combination system, air, the heating and ventilation of school buildings, the heating of public buildings, churches, and stores by furnace combination system, temperature control, estimates and contracts, and fuels.

The illustrations are very clearly drawn and freely used in connection with the text. The tables are those which are used continually in designing and in estimating.

There is an appendix made up of articles on Furnace Fittings which have appeared from time to time in the *Metal Worker*.

JOHNSTON'S "HISTORY OF THE UNITED STATES FOR SCHOOLS" has for several years been suggested in the Catalogue of the Institute as a suitable text-book with which to prepare for our entrance examinations in United States history. Professor William MacDonald, of Boston, has recently revised the work, introducing many improvements into the text as well as bringing the narrative down to date, and has also changed the title to "High-school History of the United States."

THE END OF AN ERA

BY JOHN S. WISE. Boston and New York: Houghton, Mifflin & Co., 1900. pp. 474.

This most interesting volume, written by the son of the famous War Governor of Virginia, is one of the books that will gain in value and importance with the lapse of time, because it is full of material of the sort that historians will more and more use. For it gives, with all the freshness of youth,—although written a third of a century after the events,—a young man's recollections of affairs with which he was closely in touch in the most important of the Confederate States during the years of the Civil War.

While it would be too much to expect such a book to be wholly free from prejudice and State pride, the author is singularly fair in his attitude toward the North, singularly clear-minded in his appreciation of the evils of slavery, singularly acquiescent in the inevitable result of the unequal conflict. His character sketches of many of the Southern leaders are remarkably lifelike; and his accounts of the social atmosphere of Virginia just before and during the years of secession place the South, to Northern readers, in a quite new light. The very defects of the book, from a literary point of view, such as its diffusiveness, its personal details, and its often homely style, are just those qualities which, from the point of view of social history, make it most valuable. It is greatly to be desired that more men of the calibre of Mr. Wise should, before it is too late, embody in permanent form their recollections of a society and a political condition now wholly passed away.